

MARKET STATEMENT OF THE CZECH REPUBLIC 2013

Main trends of the macro economy and economy development in the Czech Republic in 2013, mainly in manufacturing and building industry and foreign trade. Forestry and wood processing industry in the Czech Republic in 2013. Prediction of possible development for 2014 and 2015 in the Czech Republic. Some comparisons of economic development in the Czech Republic and in the EU or in selected EU countries. Stimuli, tasks and measures for wood and wooden products market development in the Czech Republic in 2013. Sustainable forest management, energy from wood, certification, market with other wood products, paper industry and ecological and carbon footprint in the Czech Republic.

1. Basic trends of the economic development in the Czech Republic (hereinafter referred to as the „CR“) in 2013, mainly in manufacturing and building industry and foreign trade.

a) Main trends of the macro economy and economy development in the Czech Republic in 2013. The economic growth of the CR in 2013 was in no way beneficial to the national development. In modern history, year 2013 can be even seen as one of the difficult years. As a result of the ailing Czech economy, we saw a -0.9% year-on-year decrease in the dynamics of the gross domestic product (hereinafter referred to as the “GDP”) growth. The same year-on-year change, i.e. the decrease by 0.9% , was statistically demonstrated for the second aggregate indicator – the gross value added (hereinafter referred to as the “GVA”). Local economic experts were rather surprised by the final calculations of the drop in GDP, since for this indicator a positive zero or slight growth had been estimated. Compared to 2012, particularly after the final refinement of the country’s GDP indicator, the documentation confirms a macroeconomic stagnation in the CR in 2013.

However, despite the stagnation we saw several improvements of and positive aspects to the development of the Czech economy right from the beginning of 2013 in comparison with the previous year. Even though the Czech industry suffered from considerable imbalances, in the first months of the year we witnessed efforts (which later showed as permanent) of the industry to gradually overcome the downward trends in economic development dynamics and to replace them with growth-oriented steps. This was confirmed by the quarterly GDP rates: it showed a negative growth of -2.3% in the first quarter, of -1.6% in the second quarter and of -1.0% in the third quarter, and a positive GDP dynamics growth of $+1.2\%$ in the fourth quarter. This return in the black confirmed that the year-and-a-half-long recession in the country was over. In comparison with 2009, the recession of the Czech economy which ended in 2013 lasted longer but was not so deep. (In 2009, the country's GDP decreased by -4.4% year-on-year.) The 2009 decline, however, lasted only one year and it was followed by a two-year period of growth. But as mentioned above, the recession from which the Czech Republic emerged in 2013 continued for as long as six quarters.

While in 2012 prices of industrial products increased by 2.1% as compared to 2011, they maintained a year-on-year growth of 0.8% in 2013. They therefore showed a similar moderate price increase as after the 2009 crisis year. However, the prices of food maintained growth at an average of 2.8% whereas they had achieved 3.5% in 2012.

Czech Republic's foreign trade surplus was at a record value of CZK 351 bil., i.e. saw year-on-year increase by CZK 45 bil. This result is credited to the faster growth of exports (by 3%) compared to imports (1.8%) and the improvement in the second half of 2013. Traditionally, the highest surplus was achieved through foreign trade with Germany, followed by Slovakia, United Kingdom, France and Austria. On the contrary the highest deficit was generated through the foreign trade with China. The results once again confirmed the strong dependence of the Czech economy on EU countries as 81% of Czech exports were directed there. With respect to the commodity structure, export of machinery and transport equipment maintained the dominant position with the share of total exports reaching almost 54%, which means a year-on-year increase by 0.4 percentage points.

b) The growth of industrial production in the CR in 2013. Based on the Industrial Production Index (hereinafter referred to as the "IPI"), Czech industrial production increased by 0.5% in 2013 whereas in 2012 it saw a decline of -0.9%. This drop in production was less and less significant throughout the year: while in Q1 of 2013 the index decreased by -5.4%, in Q2 it ended approximately at 2.4% but in Q3 the industrial production returned in the black with growth of 3.9%, and in Q4 it reached 6.1%. In December 2013, the production grew by 9.3% and we finally saw a rise in export orders by 28.3%.

In 2013 the manufacturing industry showed a 1.4% growth in production in 14 sectors out of the total of 24. The share of these sectors in total industry revenue amounted to 63.3%. Based on the IPI, particularly the following sectors of the manufacturing industry saw a rise: manufacture of other transport equipment (9.1%), manufacture of pharmaceutical products and preparations (7.6%), wood-processing and manufacturing of wooden products (6.7%), manufacture in the paper industry (2.0%), other manufacturing (6.1%), manufacture of metal structures and metal products (5.3%), manufacture of clothing (3.3%), beverages (2.8%), machinery and equipment (2.7%), and manufacture of motor vehicles, trailers and semi-trailers (2.5%). To take an opposite example, the production in the sector of printing and recorded media decreased by -7.5%.

It can be stated that in 2013 the Czech manufacturing industry re-entered the path of rising production, which corresponds to its true nature. Still, its growth has not been reflecting its potential. The IPI grew by 0.5% year-on-year but this has not been reflected in the average year-on-year utilization of production capacity, which, contrariwise, decreased by -0.6 points to 81.7%.

c) The bottlenecks of the Czech building sector in 2013. From 2003 to 2013, the evolution of the index of production in construction calculated using constant prices looked like a sine curve (showing small deviations). Between 2003 and 2007 it had rather increasing trend. However, it showed zero growth in 2008 and the period 2008-2013 was marked by a number of decreases. To take an example, the Czech building sector recorded a year-on-year growth of 9.3% in 2003, of 8.8% in 2004, of 5.2% in 2005, of 6.0% in 2006, and of 7.1% in 2007. After that there was zero growth. The 2009 crisis year saw the beginning of the decline into the red (-0.9%). However, 2010 was marked by a sharp decrease by -7.4%, which was followed by a "recovery" (-3.6%) in 2011. In 2012, the Czech building sector basically touched the bottom decreasing by -7.6%. With a decline of -6.7%, the year 2013 recorded a slight improvement.

In 2013, residential construction faced the same challenges as in the previous years: the number of completed dwellings and dwellings under construction continued to drop. There was a year-on-year decrease by 7.3% in the number of flats under construction, which was half of the value of 2008. The number of dwellings completed dropped by -14.3% year-on-year and fell to its lowest level in 10 years. In 2013 this number only grew year-on-year by 3.4% in the first quarter but after

that it was decreasing steadily for the rest of the year. All types of buildings suffered from a decrease in the resulting yearly number of dwellings completed. Completed family houses fell by -11.3% and flats in apartment buildings fell by -14.7%.

d) Development of forestry and of wood processing industry in the Czech Republic in 2013.

da) In 2013, the gross value added in constant prices **in forestry** and timber harvest recorded a year-on-year growth of 0.63% as compared to 0.6% in 2012. As for industry, the GVA recorded a year-on-year growth of 0.6% in 2012 as compared to the decrease by -0.9% in 2013.

The total harvest of coniferous and broad-leaved timber amounted to 15.38 mil. m³, 15.06 mil. m³ and 15.33 mil.m³ in 2011, 2012 and 2013, respectively. The lowest harvest was recorded in 2000, namely 14.44 mil. m³. In 2006, the harvest was the highest and amounted to 17.68 mil. m³. The annual harvest per capita amounted to 1.41 m³ in 2000, to 1.72 m³ in 2006, only to 1.47 m³ in 2011, to 1.43 m³ in 2012 and in 2013 it increased to 1.46 m³.

The ratio of broad-leaved harvested timber amounted to 11.0% and only to 8.8% in 2000 and 2006 respectively; it increased to 13.3%, 13.4% and 13.7% in 2011, 2012 and 2013, respectively. The harvest of broad-leaved timber is expected to grow in the Czech Republic also in the next years.

The area covered by forests has been growing permanently. This growth is caused by both the newly afforested non-forest land which exceeds the loss of forest area and by the refinement of data in real estate register. In 2013, the total forest area amounted to 2,663,731 ha, i.e. a year-on-year increase by 1,842 ha.

Natural, growing and economic conditions of the Czech forests are mapped in all forests on the basis of forest types. The typological system which is used as the base for differentiation of the majority of decisions made on forest management is the result of more than 50-year systematic terrain research of the forest natural conditions and has no parallel all over the world. The species composition of forest has been dropping since 2000 according to long term plans, i.e. from 76.5% in 2000 to 72.9% in 2013 in case of coniferous tree species; e.g. in case of Norway spruce from 54.1% in 2000 to 51.1% in 2013 and in case of pine, it dropped by 1% in the same period. On the contrary, the percentage of area covered by broad-leaved tree species has been growing year by year, i.e. from 22.3% in 2000 to 25.9% in 2013, e.g. in case of oak from 6.3% in 2000 to 7.1% in 2013 and in case of beech from 6.0% to 7.8%.

The age structure of forests has been improving thanks to the typological system used in the Czech Republic. E.g. the area covered by forests aged 1 to 20 years has increased from 16.1% in 1990 to 16.8% in 2013; the area covered by forests aged 101 to 120 years has increased from 8.2% in 1990 to 12.2% in 2013, and the area covered by forests aged over 121 years has increased from 4.4% in 1990 to 7.6% in 2013, i.e. an increase by 1.73 multiple.

Forest regeneration and afforestation is important for the Czech Republic. Forests are regenerated either naturally or artificially. Artificial regeneration has not been used intensively due to the economic conditions in the Czech Republic over the last years. After 2012, there was a change and the total area regenerated artificially recorded a year-on-year growth of 17 ha in 2013. The total area regenerated artificially amounted to 19,920 ha in 2013. Natural regeneration is used in the Czech forests permanently. The total area regenerated naturally recorded a growth of 2,690 ha from 2000 to 2013. It also recorded a year-on-year growth of 551 ha and it amounted to 6,112 ha in total. The total regenerated area – both naturally and artificially – amounted to 26,032 ha in 2013, i.e. it recorded a year-on-year growth of 568 ha. Forest stands are also managed by thinning. The total area of thinned forest stands amounted to 125 k ha in 2013. This means an average annual thinning scope as compared to data collected in this millennium.

In relation to the tree species composition described above, it can be concluded that the ratio of broad-leaved species in artificial regeneration amounted to 39.3% in 2013, e.g. the ratio of beech in artificial regeneration recorded a year-on-year growth of 162 ha; the ratio of spruce dropped by 194

ha in the same period. The forest regeneration – both natural and artificial – in the Czech Republic corresponds to the total volume of harvested timber both in the past years and in 2013.

Based on the data about the timber harvest listed at the beginning of this chapter, the supplies of raw wood excl. import, i.e. round wood, incl. poles and mining timber, pulp wood incl. others and fuel wood, recorded a year-on-year growth of 1.8%, i.e. 270 k m³ in 2013. As for coniferous and broad-leaved timber, the supplies recorded a year-on-year growth of 1.3%, i.e. of 173 k m³, and of 4.8%, i.e. of 97 k m³, respectively.

In spite of the increased year-on-year timber harvest in 2013 (by 1.8% listed above), the situation on the Czech market with raw timber was not good due to raw timber shortage. On one hand, forest owners exported a lot of raw timber and on the other hand, part of timber that would reach the market under normal circumstances had been blocked by the unclear church restitutions. The issues of raw timber shortage are not new on the Czech market. They demonstrated significantly in domestic wood processing industry. In 2013, the situation was extremely tense in this area. Strong competitive environment forced many wood processing companies to compensate the shortage of raw timber by import mainly from Slovakia and Poland.

As for timber market in 2013, the Czech Republic exported 16.3% of the total volume of all timber incl. pulp wood and others. This figure amounted to 12.6% in 2012. In case of industrially processed wood, the export amounted to the total of 18.6% and to 14.4% in 2013 and 2012, respectively.

This situation has other adverse impacts as well. The shortage of raw timber on the domestic market increases the domestic demand for this commodity. This – along with the high foreign demand for the raw timber – creates high pressure on the growth of prices. Due to the steady growth of prices of input raw material, the domestic producers of wooden products are forced to increase prices of end products, up to the limit of saleability. Rationalisation of savings and increased labour productivity of producers cannot compensate the growth of prices. This results in import of wooden products to the Czech Republic with a more profitable price for the traders.

db) Wood processing industry in the Czech Republic has a long tradition. Based on CZ-NACE, this sector comprises the following sections: 16, 17, 18 and 31.

As for the sector of **wood processing and production of wooden and other products** (CZ-NACE 16), the main supplier for this sector of the manufacturing industry is the company of Lesy ČR, státní podnik, (Forests of Czech Republic, state enterprise) that manages over 1,3 mil. ha of forests owned by the state (almost 86% of the total forest area owned by the state). In 2013, the production recorded a year-on-year growth in current prices according to turnover of 5.2% in case of saw mills; it dropped by 1.2% in case of production of wooden and other products. In 2013, the saw mill production share in the total sector production amounted to 28.3% and the production of wooden and other products share to the remaining 71.7%. The accounting value added recorded a year-on-year growth of 1.1% in case of the former and a year-on-year drop by 0.3% in case of the latter (production of wooden and other products). The price index recorded a year-on-year growth of 2.9% in case of the former and of 0.3% in case of the latter. As for the saw mill production, the amount of round wood delivered for break down recorded a year-on-year decrease of 1.5% in 2013; it dropped by 4.3% as compared to 2011. This shows that increased growth dynamics in these sectors is reached only in terms of finances and not in real production, as the production is dropping. Showing permanently dropping competitiveness the sector mainly survives thanks to the growth of sawn wood prices and the option to sell it aboard.

As for the sector of paper and paper products production (CZ-NACE 17), it recorded a year-on-year decrease in current prices according to turnover of ground wood, paper and cardboard of –2.1% and it recorded a year-on-year growth of production of paper and cardboard products of 3.8%. In

2013, the share of the production of ground wood, paper and cardboard in the total sector production amounted to 37% and share of the production of paper and cardboard products to the remaining 63%. The accounting value added recorded a year-on-year growth of 1.2% in case of the former and of 3.5% in case of the latter. The price index recorded a year-on-year growth of 1.4% in case of the former and a year-on-year drop by 1.9% in case of the latter.

e) Prediction of possible development for 2014 and 2015 in the Czech Republic. Recovery of the economic activity in the CR, which came in the second half of 2013, continued in 2014. In Q1 of 2014, real GDP showed a quarterly growth of 0.8% (and gross value added showed quarterly growth amounting to 1.1%), which significantly exceeded the estimate of the April macroeconomic forecast for 2014 indicating a year-on-year GDP growth of 1.7%, and of 2.0% for 2015. Based on the actual results of the Czech economy in Q1 of 2014 and on the predictions of major industrial producers, the estimates of year-on-year real GDP growth in the Czech Republic in 2014 were raised to 2.7%; some institutions even predicted a result of 2.9%. However, should the situation in the Ukraine, the EU, the Eurozone and world economy as a whole deteriorate in the third trimester of 2014, the consequences for the GDP growth in the Czech Republic in 2014 could be rather important.

The increase in growth figures for the Czech economy depends very much on the economic recovery in the EU, which is expected for this year and next year but for sure will not be as strong as it originally seemed.

However, the estimated growth of the Czech economy in both years should be positively influenced by expenditure components. Estimates say that approximately two thirds of the predicted growth will be credited to domestic demand and one third to the balance of foreign trade. For 2014, the banking sector expects a 1.5% total increase in investments in the CR amounting and a steep rise of 3.6% in 2015. In spite of the weakening of the Czech Koruna due to foreign exchange interventions of the Czech National Bank, the inflation should remain very low in 2014. Unlike in previous years, administrative influences (particularly the drop in electricity prices) should have counter-inflation effects throughout of 2014. The inflation rate could thus reach 1.0%.

Following the economic recovery in 2014 and due to delayed impact of the Czech Koruna weakening, the growth in consumer prices could accelerate and reach 2.3% in 2015. That year, a third VAT rate of 10% on selected goods and services is likely to be applied in the CR and the Czech Government had also voted for abolition of consultation fees for visiting a doctor. It can be expected that these two measures will have a subtle counter-inflation effect. The efforts of Czech employers to increase labour productivity should lead to minimal growth in employment in both years. Some impact on the unemployment rate can also be expected: in spite of the modest economic growth, the unemployment rate is expected to decrease only slightly. The volume of wages and salaries could show an increase by 1.8% in 2014 and to 3.5% in 2015. As a result of the positive foreign trade balance, the current account deficit of the balance of payments is likely to be negligible in both years. It can also be expected that fiscal policy will be expansionary rather than contractionary. Government debt as a percentage of the country's GDP should drop to 44% in 2014; the year-on-year growth could be estimated between 3.3 and 3.5%.

As for the **growth of the Czech industry**, further development is expected in 2014. The Ministry of Industry and Trade, the Ministry of Finance and the Czech Statistical Office estimate the year-on-year growth rate of the Czech industry between 3 and 5%. Due to unpredictable phenomena, as indicated, a more accurate figure cannot be given. The prediction is therefore based on the expected but uncertain recovery of the industry in Germany and the Euro area economies, on the results achieved by the industrial production in the CR in early 2014, and on the survey of selected enterprises in the CR which showed greater confidence and a more favourable assessment of potential total demand in the two years.

Analyses of the Czech building sector show that the directors of construction companies predict again a decrease in this sector in 2014 by 0.6% year-on-year. Improvement of the situation is expected for 2015 with a year-on-year increase by 1.8%.

Good results of the Czech economy in 2014 can be credited to foreign trade. In any case, the Czech economy has been recovering and foreign trade will significantly contribute to restoring and accelerating its economic growth. Exports will mainly be driven by the automotive industry, which is interlinked with a range of other sectors in the country.

f) Some comparisons of economic development in the Czech Republic and in the EU or in selected EU countries. Since its accession to the EU, the Czech Republic has been gradually making advances towards the developed EU countries, particularly towards EU-28. In 2009, the performance of its economy achieved 83% of the average value of EU-28. After that we experienced the period of recessions, crisis and stagnation. Due to this development, the Czech economy was ailing and the performance dropped to 81% of the EU-28 average. The decline stopped at 74% between 2011 and 2012 and at 73% the following year. The estimate for 2014 is 75% of the current purchasing power parity of the EU-28 and the forecast for 2015 is 75% as well. However, the Czech Republic maintains its ranking in 17th place between EU states.

Based on the IPI calculations, the industrial production showed a 0.5% growth in 2013.

The unemployment rate reached 6.8% in December 2013, which was the fifth lowest rate in the EU. The current problem is the unemployment of young people under 25 years of age in the Czech Republic and all over the world. The average unemployment rate in this age group reached 18.9% in late 2013.

For the whole of 2013, industrial producer prices in the Czech Republic were achieving positive values and increased by 0.8% on average as a result of the year.

Similarly to industry, the 2013 construction output showed unfavourable development both locally and at the EU level (decreasing by -6.7% year-on-year in the Czech Republic).

Foreign trade of EU-28 showed a surplus in 2013; the same was true for the CR both in 2013 and 2012. Compared to 2012, this was a positive development because foreign trade in the Union ended up in the red that year.

EU-28 has been and will remain in the future the most important market for Czech exports. At present, 81% of Czech exports are directed to the EU countries, the state thus being highly dependent on the EU's economic situation. However, recent developments in the Czech foreign trade show that the diversification of Czech foreign trade has begun to alter.

As for 2013 investments to the Czech Republic from other countries, the highest amount came from the Netherlands, for the second consecutive year. The share of investment from this country amounted to 40% of Czech total foreign investment. A significant amount of capital also came from Austria. The third largest investor was Cyprus, followed by Belgium.

Compared to 2012, the volume of foreign direct investment flowing from the Czech Republic towards other countries nearly doubled. From the territorial point of view, the greatest volume of Czech investments went to the Netherlands. The second highest share was directed to Slovakia and the third to France.

2. Significant stimuli, task and measures for wood and wooden products market development in the Czech Republic in 2013.

a) Measures taken in the field of economic stimuli. In 2013, the Czech Government did not adopt any measures in terms of economic support that would not be in line with market economy related to forestry, wood or other products in the forestry or wood sector or any other economy sector. Neither non-market nor administrative measures nor any other measures were adopted in the area of

economic stimuli that would limit or support free market in the Czech Republic. The market with all products was and is operated based on free competition according to existing demand and offer.

Had any stimuli, tasks or measures that would monitor the development of wood or wooden products market been adopted, this would only be impact of EU regulations. Therefore, Act no. 226/2013 Coll., on placing timber and timber products on the market effective from 1 September 2013 that stipulated competences of individual bodies incl. sanctions in the area of placing timber and timber products on the market was adopted. This act transposes the Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market.

Hence the Commission delegated Regulation (EU) No 363/2012 of 23 February 2012 on the procedural rules for the recognition and withdrawal of recognition of monitoring organisations as provided for in Regulation (EU) No 995/2010 of the European Parliament and of the Council laying down the obligations of operators who place timber and timber products on the market and the Commission implementing Regulation (EU) No 607/2012 of 6 July 2012 on the detailed rules concerning the due diligence system and the frequency and nature of the checks on monitoring organisations as provided for in Regulation (EU) No 995/2010 of the European Parliament and of the Council laying down the obligations of operators who place timber and timber products on the market was implemented. Czech Government then issued - to the Act 226/2013 Coll. - the implementing Decree no. 285/2013 Coll., on scope and manner of handing information to central registry by operators and administration bodies in the field of placing timber and timber products on the market, which became effective from 1 October 2013.

In 2013, the Government also adopted 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 Act no. 634/2004 Coll., on Administrative Fees, as amended, and Act no. 148/2003 Coll., on conservation and exploitation of the genetic sources of organisms significant for the nutrition and agriculture and on the change of the Act no. 368/1992 Coll., on Administrative Fees, as amended, (Genetic Sources of Plants and Microorganisms Act) as amended, and effective from 1 January 2014. In relation to the Act no 232/2013 Coll., two implementing Decrees were issued, namely:

- Decree No. 393/2013 Coll., on list of forest tree species, effective from 1 January 2014,
- Decree No. 402/2013 Coll., on amendment of Decree no. 29/2004 Coll. that regulates the Act no. 149/2003 Coll., on trade in forest-tree reproductive material, as amend by the Decree no. 44/2010 Coll., effective from 1 January 2014.

b) Measures taken in relation to climate change, supporting timber market. The Czech Republic, as a contracting party of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, prepares the emission report on green-house gases that comprises also the balance of emissions and decreases of land use, land-use change and forestry (LULUCF) every year.

In the reporting for UNFCCC, the carbon is stored in the biomass, dead organic mass and in the soils, whereas the reporting for LULUCF under Kyoto Protocol requires information on changes in five carbon storages (biomass on and under the ground, decaying wood, fall, and soil). A decision has been adopted for the second commitment period of Kyoto Protocol based on which the storage of carbon in wooden products will be reported.

Pursuant to the its Kyoto Protocol rules, the LULUCF contribution to the reduction commitment of the Czech Republic will be included only in the final balance after the entire first commitment period of Kyoto Protocol has been ended. The allowances of forestry management will be capped to 0.32 Mt C/year (i.e. -1,173 Mt CO₂).

In 2012, the net LULUCF decreases reduced the overall emissions of greenhouse gases by 7.25 mil. tons of CO₂ eq., which equals approx. to 5.5.% of released emissions in the Czech Republic. Presently, the estimates for 2013 show that the LULUCF contribution to the total emission balance corresponds approx. to the greenhouse gas emissions from agriculture. However, as the LULUCF sector reports a year-on-year variability of decreases, it can be assumed that the decreases in forestry will be probably reduced in near future. This is caused mainly by the age structure of forest stands in the Czech Republic. The planned increased share of broad-leaved species will also contribute to a temporary decrease. Both areas are elaborated in the report. This measure also represents a significant adaptation measure which should provide for long term stability of forest stands, i.e. also for carbon storage in long term. In the future, one can assume higher use of biomass for energy purposes and higher share of carbon storage in wooden products.

In the Czech Republic, this issue is presented by the National Forestry Programme II (NFP II). The climate change is handled under the climate protection policy (incl. measures formed as recommendation for forestry) in this document. The policy takes into account respective EU regulations and it is formulated as a research task called Impact of Climate Change on Forest Protection Measures. The task is being solved by the Faculty of Forestry and Wood Sciences of the Czech University of Life Sciences in cooperation with Faculty of Forestry and Wood Technology of Mendel University in Brno. It comprises the application of principles of sustainable forest management in order to increase the competitiveness of forestry sector incl. the wood market support. The formulated measures are then immediately implemented in the real life, as they were formulated by the Academy of Sciences of the Czech Republic that is cooperating directly with both forestry faculties on the task. In the Czech Republic, the Czech Hydrometeorological Institute is responsible for the direct solutions in practice and in relation to international organisation.

c) Acquiring energy from wood in the Czech Republic (governmental stimuli) and its use in the economy of the particular country. In the Czech Republic, the production of energy from renewable resources is regulated by the following acts: Act no. 180/2005 Coll., the promotion of electricity production from renewable energy sources and amending certain acts (Act on Promotion of Use of Renewable Sources) as amended starting from 2012; Act no. 406/2000 Coll., on Energy Management, as amended (also amended)m Act no. 458/2000 Coll., on business conditions and public administration in the energy sectors and on amendment to other laws; The Energy Regulatory Office's Price Decision No. 2/2010 of 8 November 2010 Laying down support for electricity generation from renewable energy sources, combined heat & power, and secondary energy sources; Decree no. 453/2008 Coll., on categorization of the biomass that is subject to subsidy into individual groups, Decree no. 81/2010 Coll., amending the Decree 51/2006 Coll., on conditions for access to the electricity network, etc.

Timber and harvesting residues for energy production are not regulated by any specific provisions – as it is apparent from the legislation above – but they are incorporated in the energy generation from renewable resources. The use of harvesting residues and saw dust from wood-processing industry for modern and effective use of energy originating from wood is encouraged in the Czech Republic. Two groups prevail: wooden chips and wood pellets.

In the Czech Republic, there are still reserves in the use of wood energetic chips for energy production from renewable resources. It is estimated that the reserve from its total volume ranges from 200 to 300 k tons of harvest residues per year. The use of wooden energetic chips per year amounts to approx. 85%. New biotechnologies are developed for conversion to biofuel, energy and other products with higher value added, which will contribute to the improvement of competitive position of the Czech manufacturing industry and to sustainable development. As for the biomass, it is one of the most important renewable energy sources with the total ratio of 75% in the gross production of energy from renewable sources.

Saw dust from wood processing industry, as the material for pellets, is the next usable source. 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).

The annual production of pellets can be derived from the annual timber harvest in the Czech Republic. Approx. 15 mil. m³ of wood without bark are harvested every year, approx. 5 mil. m³ thereof are exported, the annual increment amounting to approx. 20 mil. m³. 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 rest are chips, saw dust and bark.

The construction of new pellet production facilities is growing in the Czech Republic and 6 more facilities should be opened in 2014. These facilities should increase the capacity of Czech pellets production by approx. 120 k tons of wooden pellets per year; they plan to produce A1 pellets with ENplus certificates. Each year, approx. 2000 automatic pellets boilers are installed. In the Czech Republic, these boilers are subsidised under the “Green Savings” Programme operated by the Ministry of Industry and Trade of the Czech Republic

d) Measures supporting the promotion of higher market effectiveness incl. participation in the research and development issues. In the current global economic world, knowledge and know-how are becoming goods, they receive more and more attention and they belong to basic strategic priorities. Therefore, we need to use the cutting-edge trends in the area of sharing and transferring information in order to be able to handle and understand them. Hence, the support of the effectiveness of the market in the Czech Republic focuses on the support and acquisition of more and more sophisticated products with high value added, being also price competitive in the internal trade.

In the Czech Republic, all areas of economic activities deal with the support and achievement of higher market effectiveness. This also applies to production, mainly to large companies. This issue is also tackled by central bodies, research and development institutions, universities, other experts and a whole range of private organisations. 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 with the aim to provide for highly effective international competition within science and technics for both sides and to maintain and protect the intellectual property both in production and in mutual trade.

Endeavours leading to the release of digital economy potential, increasing research, development and innovation and making them more effective that is to be driven by the market requirements will be supported as well as endeavours leading to modernisation of industrial base, more effective use of sources, reduction of greenhouse gases emissions, improvement of trade and consumer environment and other important areas. There are specifics such as the potential of energy prices growth, persisting high energy consumption by the Czech economy, reduction of the security of outage-free supplies due to growing dependency of the Czech economy on import of material for energy production from third countries and ecological aspects that will have to be taken into account.

e) Measures taken to increase the responsibility of social associations (corporations). Generally, the issues related to social care and 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.

As for measures from the prospective of social associations (corporations) registered in forestry, these organisations are non-profit, facultative and non-governmental organisations established mainly in order to protect the interests of citizens and employees in this particular field. None of these non-profit, facultative and non-governmental organisations within the Czech forestry provides solely for the increase of responsibility related to social issues as single their activity. If they

perform such activity, it is always a part of e.g. legal consulting, employment or similar activities. The number of registered association is not big.

The job description and the responsibilities for the performed activity incl. social responsibility lie in the competences of the associations. The government neither directs, nor manages nor finances these associations. Therefore, the government neither issues any directives nor measures regulating the activities incl. social or financial activities, nor provides any subsidies. One of the significant organisations is the Association of Entrepreneurs in Forestry of the Agrarian Chamber of the Czech Republic. This organisation set the task – along with legal consulting and representation of its members in legal affairs and in creation of National Forestry Programme – to monitor and to maintain the social securities for all employees in the forestry sector, to maintain the performance on forestry market while providing professional care for forest as such and to manage and handle forest property with due care.

Another important organisation is the Czech Academy of Agricultural Sciences – Forestry which unifies the employees in forestry research and universities. It has several professional commissions used by both the ministry and other expert entities; it also helps to answer incoming questions related to social issues. We would also like to mention the Association of owners of municipal and private forests in the Czech Republic; it enforces the owners' rights of its members, increases the prestige of forestry and the use of forest biomass, incl. the responsibility within the social sphere, and it activates the cooperation with local authorities, with ministries and other official bodies and institutions. From the whole range of similar or even more important organisations, the following are worth noting: Czech Association of Forestry Entrepreneurs as a professional NGO advancing the interests of SMEs incl. social issues; Association of Self-Employed Persons in the field of Forestry which strives - along with creation of best conditions for employees to develop forestry - also to support the business, to intermediate contacts among self-employed persons and to protect its members.

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

In the Czech Republic, it is common that the activities in this field are performed by both public and private bodies and organisations such as the Academy of Sciences, research institutes, universities and science institutes active mainly in research and development. As for development, these organisations comprise ministries, companies and associations of respective entrepreneurs, professional organisations and others. They perform the research or development activity based on the requirements, definitions and orders issued by individual entities, bodies and organisations.

As for public forestry institutions, the most requested is the Forestry and Game Management Research Institute (FGMRI); among tertiary schools it is the Faculty of Forestry and Wood Sciences and Faculty Environmental Sciences of the Czech University of Life Sciences, Faculty of Forestry and Wood Technology of Mendel University in Brno, Academy of Sciences in České Budějovice and in Brno and private research institutions.

Forestry research is subsidised by the government and it is highly desirable. As for wood processing industry, the research is missing, since the wood processing research institutes ceased to exist due to their transformation to private entities after 1989 and particularly due to the lack of jobs and funding. SMEs processing wood do not request the research, mainly because of financial reasons, even though they would need it. The wood processing research is provided by big mainly international entities, based on their needs.

Basic, technology and applied research in forestry focuses on forest and landscape ecosystems, forest and forest environment evaluation, increase of forest resistibility to climate change, research of new technology procedures within forest management, and new options for forestry. It also focuses on strengthening the competitiveness and sustainability of the forestry based sectors and

on ecological management. It is partly directed towards the social development of Czech society, landscape care, new disciplines within bionics, biomechanics and bioenergetics, application of new calculation methods, physical areas related to bioenergetics and biological processes, modification properties of natural materials and it also partly focuses on issues regarding applied design for housing.

As for the area of increasing the wood and wooden products market, we advanced in new methods for construction of wooden buildings and their elements with the intention to increase the demand for wooden houses in the Czech Republic. We also focus on the most realistic increase of the performance and effectiveness of wood and wood processing sectors, not only in case of SMEs. These tasks results in provisions for supplying the raw material from Czech forests for Czech small and medium enterprises, e.g. by limiting extensive export in order to realise higher effectiveness and competitiveness. We also advance in growing fast-growing tree species for other but wood processing purposes, mainly for energy production.

In 2013, we focused on areas such as improvement of management in forestry companies, issues of economic effectiveness of coppice forest, economic effectiveness of cultivation, development and modelling of growth processes. Last but not least we worked on new planning and optimisation of forests, harvesting and transportation technologies, use of landscape in Central Europe, ecophysiology of tree species, etc.

3. How does the development of the market with the products of the wood processing, paper, polygraphy and furniture industry and especially timber market foster to the overall development of Czech economy and manufacturing industry

a) **Assessment of the results of the entire wood processing industry (WPI) compared with the results of the entire manufacturing industry in the Czech Republic (MI CZ) in 2013.** Based on the data of the Czech Statistical Office and the Ministry of Industry and Trade of the Czech Republic, the entire wood processing industry employed the total of 87,018 persons in 2013 as compared to 90,887 in 2012. The total employment rate of the wood processing industry within the manufacturing industry amounted to 8.3% as compared to 8.5% in 2012. In 2012, the total of 47,180 companies were active within wood processing industry, i.e. 27.1% out of the total number of companies active in manufacturing industry. In 2013, this figure increased to the total of 47,800; however it was only 26.4% of the total number of companies active in manufacturing industry. The most companies, namely 48,188, are active in the sector 25 – Production of metal constructions and metal working products out of the 33 sectors of the manufacturing industry. Sector 16 – Wood processing and wooden products scored number two with 29,362 companies and 33,147 employed persons in the manufacturing industry in the Czech Republic.

The dynamics of production indices development in wood processing industry and in the manufacturing industry shows certain slowdown for the period from 2006 to 2009. As for wood processing industry, the drop is lower – which was satisfactory – as compared to the monitored indices of the manufacturing industry. E.g. as for the accounting value added, the dynamics dropped by –9.2% in the wood processing industry as compared to –11% in the manufacturing industry in 2009 as compared to 2006. As for labour productivity per employee, the dynamics dropped by –12% in the wood processing industry as compared to –12.6% in the manufacturing industry. As for sales, the drop amounted to –10% in the wood processing industry as compared to –18.2% in the manufacturing industry. As for gross operating surplus, the drop amounted to –21.7% in the wood processing industry as compared to –28.7% in the manufacturing industry.

WPI copped better with the rising competition till 2009. Then the Czech industry started to

grow. This was mainly due to the motor vehicle production, production of machines and machinery, and electronics and electric appliances production. This is supported by the dynamics growth of the listed indices. From 2009 to 2013, the accounting value added of wood processing industry dropped by -4.5% as compared to the growth of +20.1% in the manufacturing industry; as for the labour productivity per employee, the dynamics grew by +9.6% in the wood processing industry as compared to the growth of +22.5% in the manufacturing industry. These data show that the competitiveness of the wood processing industry is becoming a problem that cannot be underestimated.

4. Development of timber and wooden products market in 2013

a) Market with wood raw materials in 2013. In 2012 and 2013, the total timber stock amounted to 685.6 mil. m³ and to 687.2 mil. m³ respectively. As compared to 1930, the timber stock in the Czech forests has increased more than twice. The average stock per 1 ha of forest area incl. clear cuts amounts to 264 m³ and it remains stable over the last years.

In 2013, 15.33 mil m³ of raw coniferous and broad-leaved timber were harvested in Czech forests, i.e. they were delivered on the market (excl. import), as compared to 15.06 mil. m³ in 2012. The year-on-year growth of harvest is mainly credited to salvage felling. The year of 2013 was less favourable from the prospective of forest protection as compared to 2012. There were more wind brakes due to windstorms in August, and high summer temperature caused draught that resulted in overpopulation of spruce bark beetles in Moravia and Silesia; game became overpopulated as well and forests were jeopardised by further biotic factors. Salvage felling amounted to 4.2 mil. m³ in 2013 and it increased by 0.86 mil. m³ as compared to 2012.

Therefore the necessary preventive, protective and defensive measures were adopted in order to protect the forests. The threats were combated on time and their negative impacts on forests were prevented.

In 2013, the ratio of broad-leaved timber in the total harvest rose again partially. In 2010, 2011 and 2013, the ratio amounted to 10%, 13.35% and 13.7%, respectively. Such a significant growth of broad-leaved timber harvest had not been achieved since 2006. The ratio of broad-leaved and coniferous timber harvest in the Czech Republic is determined by the structure of mature forest stands available for harvesting, but mainly by the growing demand for this raw material on the market; however the demand is growing rather abroad than in the Czech Republic.

In 2013, the export of all raw timber, i.e. broad-leaved and coniferous round wood and pulp wood, charcoal, fuel wood, chips and splinter, saw dust and residues amounted to 6,183 k m³ as compared to 5 316 k m³ in 2012. The year-on-year growth amounts to 8.6%, i.e. 867 k m³, in 2013. As for the total export in 2013, 2 374 k m³ timber were exported to Germany, 3 420 k m³ timber to Austria and 156 k m³ to Slovakia as compared to 2 150 k m³ to Germany, 2 805 k m³ to Austria and 117 k m³ to Slovakia in 2012. This year-on-year growth of the total timber export – by 22% to Austria in 2013 – demonstrates the existing problem of lack of raw timber for domestic industry.

As for the total import of raw timber to the Czech Republic in 2013, it amounted to 3 545 k m³ in the same structure as export. In 2012, this figure amounted to 2 580 k m³. The import has risen by 965 k m³, i.e. by 37.4% year-on-year.

The tendency of foreign trade with raw timber for first seven months of 2014 shows in year-on-year comparison that the export and import will be higher in 2014, in terms of finances. The export and import rose by 7.9% and by 8.5% respectively for this particular period above.

b) Market with round wood, incl. pole and mining timber in 2013. Basic wood for saw mills, i.e. round wood, originates basically from domestic production. Timber for Czech saw mills is

imported only exceptionally and it almost always compensates the high export by forest owners based abroad, exclusively due to financial reasons.

Production (supplies) of coniferous and broad-leaved round wood amounted to 8 645 k m³ in 2013; i.e. a year-on-year increase by 24 k m³ (0.3%). In 2013 and 2012, the coniferous round wood production amounted to 7 925 k m³ and 7 911 k m³ respectively. This difference shows a permanent trend. A higher production was recorded in broad-leaved round wood, namely by 720 k m³, i.e. by 1.4% as compared to 2012. The drop in coniferous round wood (-1.3%) and broad-leaved round wood (-13.8%) in 2012 as compared to 2011 is not compensated by the growth recorded in 2013. The production deficit of coniferous and broad-leaved round wood amounted to -1.1% and -12.6% respectively in 2013 as compared to 2012.

In 2013 and 2012, the domestic coniferous round wood consumption amounted to the total of 6 274 k m³ and 6 340 k m³ respectively. The decrease of the consumption in the Czech economy amounted to 66 k m³, i.e. a decrease by 1%. As compared to 2011, the coniferous round wood consumption dropped by 310 k m³, i.e. by -4.7%. The development of domestic broad-leaved round wood consumption has recorded an annual growth since 2011. In 2013, 594 k m³ of broad-leaved round wood out of the total production of 720 k m³ were consumed in the Czech Republic; this means an increase by 4.8% and even by 7.8% as compared to 2012 and 2011, respectively. The domestic consumption results reflect the impacts of foreign trade.

As for coniferous round wood, we exported 2 797 k m³ and 2 571 k m³ in 2013 and 2012, respectively. The year-on-year growth amounted to 8.8%. The import amounted to 41% of export, i.e. 1 146 k m³, and 39%, i.e. 1 000 k m³, in 2013 and 2012, respectively.

As for broad-leaved round wood, we exported 234 k m³ and 233 k m³ in 2013 and 2012, respectively. The year-on-year export growth amounted only to 0.4%. The import amounted to 46.2% of export, i.e. to 108 k m³, and to 1 000 k m³, in 2013 and 2012, respectively. The year-on-year growth reached to 20%., i.e. 38.6% of the annual export.

The ratio of coniferous round wood export in the total coniferous round wood production amounted up to 35.3% and only to 32.5% in 2013 and 2012, respectively. The percentage of broad-leaved round wood export in the total broad-leaved round wood production was 32.5% and 32.8% in 2013 and 2012, respectively.

c) Market with pulp wood incl. ground wood in 2013. In 2013 and 2012, the production of coniferous and broad-leaved pulp wood amounted to 4 504 k m³ and 4 420 k m³ respectively. This means a year-on-year growth by 84 k m³, i.e. by +1.9%. In 2012, there was a year-on-year decrease by -4.5%. In 2013, there was a drop by -2.7% as compared to 2011.

Over the last years, also the production of coniferous pulp wood has been decreasing gradually. In 2011, 2012 and 2013, the production amounted to 4 277 k m³, 3 949 k m³ and 4 037 k m³ respectively. The year-on-year growth of coniferous pulp wood amounted to 2.2% and the figures of 2011 were not reached.

As for production of broad-leaved pulp wood, it amounted to 352 k m³, 471 k m³ and 467 k m³ in 2011, 2012 and 2013, respectively. This means a year-on-year decrease in production of broad-leaved pulp wood by 4 k m³, i.e. by -0.8%.

In 2013 and 2012, the import of coniferous pulp wood amounted to 1 020 k m³ and 749 k m³, respectively. This means a year-on-year growth by 271 k m³, i.e. by whole 36.2%. The ratio of the import in the entire production reached 25.3%. In 2011, the import amounted to 1 087 k m³ and its ratio in the entire production reached 25.4%. In 2013, 2012 and 2011, the export amounted to 1 189 k m³, 1 040 k m³ and to 1 564 k m³, respectively. In 2013, this means a year-on-year growth by 149 k m³, i.e. by 14.3%.

As for broad-leaved pulp wood, the import was extremely high in 2013 as compared to previous years and it amounted to 168 k m³. In 2012 and 2011, the import amounted only to 36 k m³ and even only to 22 k m³, respectively. The import of broad-leaved pulp wood recorded a year-on-

year growth by significant 132 k m³, i.e. 4.7 multiple of annual import as compared to 2012. As for the export of broad-leaved pulp wood in 2013 and 2012, it amounted to 72 k m³ and 68 k m³, respectively. It was lower by 2 k m³ as compared to 2011.

In 2013, the domestic consumption of coniferous pulp wood increased and reached 3 868 k m³. In 2012, it reached 3 658 k m³. This means a year-on-year increase by 5.7%, i.e. by 210 k m³. In 2012, the consumption was lower by 3.7% as compared to 2011. In spite of increase of coniferous pulp wood consumption by 68 k m³ as compared to 2011, the original level of consumption was not reached in 2013.

In 2013, the domestic consumption of broad-leaved pulp wood reached 563 k m³ due to high import in 2013. This means a year-on-year increase by 28.3%. This increase still does not approach the year-on-year increase of domestic consumption of 2012, which amounted to 46.3%.

As for foreign trade with coniferous and broad-leaved pulp wood, the import amounted to 1,188 k m³ and only to 785 k m³ in 2013 and 2012, respectively. However, the import amounted to 1 109 k m³ in 2011. In 2013, the year-on-year increase of the import was high, namely by 51.3%. The drop of import of coniferous and broad-leaved pulp wood by 29.2% in 2012 as compared to 2011 was not only compensated but even exceeded by 79 k m³ in 2013.

d) Breakdown of coniferous and broad-leaved round wood in 2013. Round wood market has been recording year-on-year drops over the last years. This applies mainly to coniferous round wood. This leads to the decrease of supplies to be broken down in Czech saw mills, hence the sawn wood – product with higher value added – production decreases.

In 2013, the amount of coniferous and broad-leaved round wood broken down recorded a year-on-year decrease by 100 k m³, i.e. by 1.5%. However this means a decrease by –16.2% as compared to 2010.

Large Czech-based saw mills such as STORA ENSO TIMBER ŽDÍREC, s. r. o., STORA ENSO TIMBER PLANÁ, s. r. o., MAYER - MELNHOF HOLZ PASKOV and other wood processing companies strongly depend on the export as they export up to 86% of their sawn wood production.

e) Market with coniferous sawn wood in 2013. In 2013, the coniferous sawn wood production decreased due to lower break down of coniferous round wood as compared to 2012. The coniferous sawn wood production amounted to 3 760 k m³ in 2013; this means a year-on-year decrease by 237 k m³, i.e. –5.9%. In 2013, the decrease of coniferous sawn wood production amounted to significant 732 k m³, i.e. –16.3% as compared to 2010; this means a decrease in annual production by 18% for the monitored period.

In 2013, the export of coniferous sawn wood amounted to 3 225 k m³; this means a year-on-year increase by 315 k m³, i.e. by 10.8%; the export was the highest since 2010 and all this under unfavourable conditions for the development. The import of coniferous sawn wood recorded a year-on-year reduction by –20.5% in 2013. The deficit can be credited to the drop of the annual production in construction industry; nevertheless the construction industry dropped only by –6.7% year-on-year. Over the last six years, the import of this sawn wood has been rising, except for the last two years, when the economy could not overcome the recession.

The sawn wood consumption with a mature industry and construction industry has been declining each year over the last six years, except for 2010. Even in 2013, it recorded a year-on-year decrease by 655 k m³, i.e. unbelievable –41.2%.

In 2010, the wood prices started to grow gradually; this trend persists till now. In 2013, the average price of spruce class III A/B, i.e. round wood to be processed in saw mills, amounted to 2,175 CZK/ m³ as compared to 2,135 CZK/ m³ in 2012.

f) Market with broad-leaved sawn wood in 2013. Contrary to coniferous sawn wood, the production of broad-leaved sawn wood has been rising since 2008, except for 2012. The growth is not significant, but it still reflects the increased demand for broad-leaved sawn wood, mainly abroad. And Czech forests can cope with the increase.

The annual production of broad-leaved sawn wood ranging from 250 to 300 k m³ could be suitable for the Czech economy, if the consumption of wood and wooden products does not grow in the future. This assumption, however, does not correspond to the future development. Growing wood consumption, e.g. in apartment construction and industry construction, will have to be covered by broad-leaved sawn wood and the sawn wood would have to be directed towards domestic market instead of into export. The domestic consumption of broad-leaved sawn wood could equal to the annual volume ranging from 330 to 360 k m³ in the future.

The ratio of broad-leaved sawn wood export to the total production is high, similarly to the export of coniferous sawn wood. In 2013, the export of broad-leaved sawn wood reached 87.7% of its total production in the Czech Republic (in 2012, it reached 92.4%).

g) Market with fuel wood in 2013. In 2013, the Czech market was fully supplied with fuel wood. The total supplies from domestic production amounted to 2 182 k m³, 1 267 k m³ thereof was coniferous fuel wood and 915 k m³ thereof broad-leaved fuel wood. The fuel wood supplies recorded a year-on-year growth by 162 k m³, i.e. 8%. As for broad-leaved fuel wood, the increase amounted to 11%.

The import of both coniferous and broad-leaved fuel wood amounted to 56 k m³ in 2013 as compared to 53 k m³ in 2012. The export of all fuel wood amounted to 172 k m³ in 2013 as compared to 115 k m³ in 2012. This means a year-on-year growth by 49.6%. The domestic consumption of fuel wood 2 066 k m³ in 2013 as compared to 1 958 k m³ in 2012; this means a year-on-year growth by 5.5%.

As the market influenced significantly the price growth mainly of broad-leaved timber, namely of oak, and mainly in Q1 and Q4 of 2013, the fuel wood prices grew only in Q4 of 2013, so the average fuel wood price grew year-on-year only by 5 CZK to the total average price of 1005 CZK/m³.

5. The issue of producing energy from wood not only in 2013.

The statistical enquiry on the use of renewable and secondary energy sources processed by the Ministry of Industry and Trade of the Czech Republic shows a clear growth in fuel wood consumption based on wood biomass for energy production. From 2004 to 2012, there was a growth in chips and saw dust by 67%, briquettes and pellets by 48% and in fuel wood used primarily by households by 26%. As for cellulose extracts, the consumption is more less stable, as there was no significant change in the capacities of wood pulp and paper production. In 2013, a growth of fuel wood consumption based on wood biomass for energy production was recorded.

A new Biomass Action Plan for the Czech Republic for the period from 2012 to 2020 was drafted and it was approved by the Czech Government on 12 September 2012; in parallel the National Action Plan for Energy Originating from Renewable Sources was discussed and approved by the Czech Government on 8 November 2011.

In 2011, along with other governmental measures regulating these issues, the Ministry of Industry and Trade of the Czech Republic declared the National Programme for Support of Energy Savings and Use of Renewable Energy Sources, the so called EFEKT 2011 Programme. Further measures for use of forest biomass for energy production are defined under Programme 4 that is part of the National Forestry Programme.

Finally, the Czech government took notice of revision of the National Energetic Conception of the Czech Republic on 8 December 2012 and it approved the submission of this document into the process of environmental impact assessment (EIA), as well as the key aspects of the energetic strategy

as defined under the Concept. The Conception comprises the energy production strategy till 2040. The main pillar of the Conception comprise the strengthening of nuclear power production incl. maximum use of waste heat, reducing the production electricity from coal, development of economic effective energies from renewable sources under gradual cut back of financial subsidies for new resources in order to reach the target set for the energy from renewable sources exceeding 15% and last but not least to use the waste in facilities using waste for energy production with the aim to use up to 80% of the combustible waste after sorting by 2040.

6. Certification of forest products in 2013.

In the Czech Republic, forest certification appears to be one of the most effective market tools that is supporting sustainable management principles in the forestry and preventing illegal logging presently.

In the Czech Republic, forest certification comprises the process, when an independent organisation issues a certificate to the forest owner, which confirms that their forest management complies to pre-defined criteria of sustainable management. By accepting the certificate the forest owners confirm their obligations to manage their forest according to pre-defined criteria. The obligations concern both harvesting timber and broad complex of social, ecological and economic forest functions that correspond to the sustainable management of natural resources. The certification system in the Czech Republic complies with the Helsinki definition.

Currently, there are two certification systems used in the Czech Republic, namely FSC (Forest Stewardship Council) and PEFC (Programme for the Endorsement of Forest Certification Schemes).

More than 70% of Czech forest area are certified under PEFC system (approx. 400 individual forest owners), and more than 220 entities are involved in the processing chain. The area of forests certified under PEFC amounted to 1,827,326 ha in 2013, i.e. it remained the same as in 2012.

The remaining part of the forest area in the Czech Republic is certified under FSC system. In 2013, the number of FSC certificates in the processing chain increased by 20% to the total of 189.

Generally, both certifying organisations in the Czech Republic focused on similar activities and they both achieved similar results in 2013.

7. The issue of added value of wooden products in the Czech Republic

The development trends of the annual accounting value added in current prices, measured by the year-on-year increments from 2006 to 2013 and monitored in individual years, will assess the economic position in time both in the wood processing industry as well as in the manufacturing industry of the Czech Republic. The dynamics of year-on-year increments of annual accounting value added in wood processing industry as compared to the dynamic of this index in manufacturing industry showed a very favourable situation in both monitored areas in 2007 as compared to 2006. The year-on-year increment amounted to +7.3% and to +7.7% in wood processing industry and manufacturing industry, respectively. This meant a very good result for wood processing industry when taking the economic strength of both sectors into account. From 2010 to 2013, the increments of annual accounting value added recorded positive values in manufacturing industry, however the development of this index of wood processing industry was unstable.

The competitiveness and effective use of wood processing industry in the Czech economy were negatively influenced by the worldwide crisis and the European crisis. This was neither foreseen nor expected. Therefore, it will be necessary to provide for the needed competitiveness and effective use of Czech wooden products both in the domestic and world market, and to do so by joined cooperation and actions of forest production and manufacturing industry sectors and with help provided also by other resorts and by the EU. Financial issues related to new and highly effective technics and technology will play one of the key roles in terms of higher competitiveness within this area of the Czech economy.

8. Market with other wooden products in 2013.

In the Czech Republic, this market concerns basically the market with agglomerated products such as particle boards incl. OSB, fibreboards and plywood. This is a market with sophisticated products where high value added is achieved. In the Czech Republic, trading these products is rather exceptional as the annual export of agglomerated products such as particle boards incl. OSB or fibreboards exceeds the domestic production; as their production has not risen since 2010, the foreign demand is covered by re-exporting the import.

a) Particle boards incl. OSB in total. The total annual production has been reporting a dropping trend year by year since 2010. The particle boards incl. OSB production amounted to 1 085 k m³, to 1 052 k m³, to 1 033 k m³ and only to 1 032 k m³ in 2010, 2011, 2012 and 2013, respectively. This year (2014) the annual production is expected to reach the level of 2011. The year-on-year drop amounted to 0.1% in 2013. The export of particle boards incl. OSB amounted to 1 339 k m³ and to 1 335 k m³ in 2011 and in 2012 and 2013, respectively. Contrary to stagnating production of 2012, the import of particle boards incl. OSB increased significantly, namely by 32.9% in 2013 as compared to 2012. The annual export of particle boards incl. OSB remained the same in 2013 and in 2012, but the import rose, and the domestic consumption recorded a growth by 88.2% and 77.2% in 2013 as compared to 2012 and 2011, respectively. Under the conditions of Czech economy in 2013 and the drop of construction production, all signs point to the fact that the goods remained in the importer's storehouses instead of being used by the domestic consumption.

The ratio of particle boards incl. OSB export to the domestic production incl. import amounted to 79.9% and to 88.2% in 2013 and 2012, respectively. The annual export of particle boards incl. OSB that amounted to 1 335 k m³ in 2013 was by 303 k m³ higher than their domestic production.

b) Fibreboards. Based on this and previous market statements, it is apparent that the production of fibreboards is traditionally low in the Czech Republic. The product import exceeds the national production five times. Based on the statistics, the production of fibreboards amounted to 41 k m³ in 2013, i.e. the same amount as in 2012. Increasing production is probably not rentable in the Czech Republic also due to low annual trends in domestic consumption. The annual import of fibreboards is stable and has ranged from 217 to 218 k m³ over the last three years, except for 2012, where the import amounted to 211 k m³. Exports exceed the domestic production of fibreboards approx. 2.2 to 2.3 times. In 2013, 2012 and 2011, the Czech Republic exported 91 k m³, 85 k m³ and 97 k m³, respectively. Domestic consumption of this cheaper and replaceable product shows a growing trend. In 2011, 2012 and 2013, the domestic consumption amounted to 162 k m³, 167 k m³ and 168 k m³, respectively. One can assume that the predicted growth of the Czech economy will result in growing domestic consumption of particle boards incl. OSB, rather than of fibreboards.

c) Plywood. The plywood production remains stable in the Czech Republic, if no crisis occurs, as we have experienced over the last years. In 2012 and 2013, the plywood production amounted to 178 k m³ and 180 k m³, respectively. The increased production by 2 k m³ in 2013 was the effect of restarted growth of consumer industry in the last quarter of the year. In 2012, the import rose and both the production and import dropped. In 2013, the import dropped to 48 k m³, i.e. by 32.4%. The plywood export amounted to 119 k m³ in 2013, i.e. a year-on-year increase by 2 2 k m³ was recorded. The domestic consumption of plywood within the Czech economy amounted to 109 k m³ in 2013. The ratio of plywood export in the production and import reached 47% and 52.2% in 2012 and 2013 respectively.

9. Wood pulp and paper in 2013.

Consumption of coniferous raw wood for wood pulp production amounted to 3 577 k m³, i.e. a year-on-year growth by 118 k m³ and 3.4% in 2013. 2 374 k m³ thereof was coniferous pulp wood and 1 203 k m³ thereof wooden chips and coniferous splinters. The total pulp wood consumption rose by 87 k m³ (growth by 3.8%) year-on-year; in 2012 it recorded a year-on-year decrease by -192 k m³, i.e. by -7.7%. The consumption of wooden chips and coniferous splinters recorded a year-on-year increase by 31 k m³ (by 2.7%); in 2012 it recorded a year-on-year decrease by 75 k m³ i.e. by -7.7%.

In 2013, the paper industry produced 449 k tons of pulp, 445 k tons thereof were chemical pulp and 4 k tons thereof other pulp. As compared to 2012, when the production amounted to 623 k tons, the production dropped by -27.9%, i.e. by -174 k tons in 2013. In 2012, the drop amounted to 81 k tons with the total production of 704 k tons as compared to 2011. The Association of Czech Paper Industry explains the reduced production by reclassification of the company of Biocel Paskov as it is not any more classified as paper pulp but as viscous wood pulp.

The paper consumption is stable, i.e. 1,343 mil. tons. The total production amounts 769 k tons; nevertheless 694 k tons were exported and then 1,268 k tons were imported in order to cover the total domestic demand for paper product. This results in significant loss in the foreign trade balance.

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

"Ten in Ten" Project initiated by Global Footprint Network, as an aggregated environment indicator, which should become part of standard statistical monitoring and national accounts in each country similar to gross domestic product and which would strive to introduce ecological footprint worldwide, is still missing. Nevertheless, the Czech Republic has a basic concept document for this area. It is called Strategic Framework of Sustainable Development in the Czech Republic and it comprises the total ecological footprint of the Czech Republic, with the carbon footprint being the most significant.

Charles University Environment Centre Prague is the partner institution for the National Footprint Accounts in the Czech Republic and also cooperates on the methodology and verification of the national accounts of ecological footprint and biocapacity.

As for the carbon footprint, the activities are developing in a promising way also at lower levels in the Czech Republic. This is due to various trainings and the online calculator but mainly due to the growth of companies that focus on such activities. Hence, one can expect that the number of companies, cities and municipalities, which will ask for carbon footprint calculation, will grow and that they will adopt measures to reduce the footprint. The Czech Republic is adopting measures allowing for the reduction of the carbon footprint to be profitable on any level, thus contributing to the welfare of the society.

As for the final effect, it is necessary to compare the ratio of footprint and biocapacity, i.e. the ratio of demand for ecological capacity (footprint) and available offer of renewable nature capacity (biocapacity). As for cultivated and arable land, the ratio amounts to 0.95 and for forests to 0.82 in the Czech Republic. From this prospective, the Czech Republic belongs to countries with sufficient biocapacity in the majority of the components of the ecological footprint. The production of agriculture and forest land can be considered as sustainable from the prospective of ecological footprint, as it is in line with the available biocapacity. Off course, this does not mean that agriculture and forestry would have no negative impacts on the environment. However, these aspects are not covered by the ecological footprint and we have to use other agro-environmental or forestry indices.