

## **MARKET STATEMENT OF THE CZECH REPUBLIC 2016**

### **BASIC TRENDS OF CZECH ECONOMY DEVELOPMENT**

#### **1. DEVELOPMENT OF CZECH ECONOMY IN 2016**

In 2016, the industrial production index of the entire Czech industry recorded a year-on-year growth by +3.5%; 2.2 percentage points thereof were achieved by car, trucks and trailers making industry.

The main factor for growing Czech economy was the household consumption which grew by +2.9% as compared to 2015. The economy profited from the good labour market situation, growing available rent as well as from consumers' high trust in the growth of the Czech economy. Real estate activities and mainly agricultural, forestry and fishery activities prospered and the GVA growth (+9.5%) was helped by excellent harvest.

The household consumption growth was supported by relatively good employment and salary dynamics and for the majority of the year also by low inflation which was positively influenced by the oil prices. E.g. employment grew by solid +1.4% and +1.9% in 2015 and 2016 respectively. In Q4 2016, the employment grew by +2.2%, i.e. the highest growth in the history of the Czech Republic. In 2016, the inflation reached 0.7% as compared to 0.3% in 2015.

Inflation without seasonal work according to the comparable international methodology saw further decline to 4.0% in 2016 and was the lowest in EU. The salaries in current prices grew by +5.8% in 2016 as compared to +4.4% in 2015,

The Czech economy growth was contributed by the foreign trade development. It contributed equally to improving the balance of goods and services. The excess on the current account of payment balance reached the record value of +2.1% GDP.

Lower dynamic of Czech foreign trade led to slowed year-on-year real growth of Czech export of goods and service, i.e. from +7.7% in 2015 to +4.3% in 2016. The growing Czech import was going from +8.2 in 2015 to +3.2% in 2016.

In general, the dynamics of Czech economy growth was rather average in 2016. As the population has been regularly growing moderately recently and it reached 10.579m people at YE2016, the obstacles of growing population for increasing the dynamics of Czech development have not yet demonstrated as in other EU countries. In the Czech Republic, the population development is more favourable as expected. 37.5k people moved into the Czech Republic, i.e. by 2.6k more as in 2015. The highest immigration was from the Ukraine (6.8k), Slovakia (6.7k) and Russia (2.4k). 17.4k Czech citizens emigrated in 2016.

#### **2. SUMMARY OF PROCESSING AND CONSTRUCTION INDUSTRY IN 2016**

##### **a) Basic characteristics of processing industry in the Czech Republic in 2016.**

Czech processing industry grew according to the IPP index by +4.3% in 2016 as compared to +6.0% in 2015. In spite of losing certain growth dynamics the industrial production was growing in the Czech Republic. Czech processing industry has been playing a key driving role for the development of the entire Czech economic growth over the years. It is the driver of the Czech economy also in terms of employment and salaries, as the number of jobs grew by 25k of new positions and the average salary grew +4.3% in 2016. Czech processing industry has secured its exceptional position within the Czech economy even though its production prices dropped by -1%. The processing industry contributed by +1.3% to the year-on-year GVA growth of +2.2% and this with balanced growth in all quarters of 2016.

As for small sectors, the furniture producers did well as their production grew by more than one quarter over the last four years and +6.3% in year-on-year comparison. The biggest growth was seen in printing and copying recorded carriers, namely by +13.9% as well as leather and leather-based production by +5.3%. Interesting is that two fastest growing sectors in year-on-year comparison are by 2/3 represented by SME in terms of sales, namely furniture production and printing and copying recorded carriers. The growing figures can be credited partly to growing exports which influence the entire industry. The annual growth dynamics of the processing industry was partially reduced by pulp and paper industry, sectors of timber processing industry.

#### **b) Growing construction industry in Czech economy in 2016.**

Construction industry did not keep up with the growth of two past years. In 2016, it dropped by -5.9% in year-on-year comparison. This was caused by mainly non-readiness of new projects and higher 2015 comparison base. The most influenced branch was the civil engineering. The production of this segment dropped by -15.9% in year-on-year comparison mainly due lack of new big infrastructure projects. The production of building construction dropped by -0.8% in first months of 2016, but it reversed the tendency and grew gradually in the second half of 2016.

Wooden buildings recorded a major growth in 2016. 2,013 wooden family houses were built in 2016, i.e. a year-on-year growth by 12.4%. The development of wooden buildings relates both to cheap mortgages and satisfaction and positive perception of living in wooden houses, favourable prices of these houses and growing competition. It appears, that wooden construction level in the Czech Republic will reach the level of Germany or Switzerland, i.e. around 17-20% of the family houses market share. Czech building companies kept up with the tendency of reduced employment in 2016. The average number of employees dropped by -1.7% while the average salary grew by +3.5%.

### **3. GROWTH ASSUMPTIONS IN 2017 AND 2018**

The prognosis is indicating that in spite of lasting problems both in EU and in global economy the growth of real GDP could reach +2.5% both in 2017 and 2018. However, the improved condition of the Czech economy and foreign development after 1H 2017 indicate that the real GDP could grow by +3.1% and +2.9% in 2017 and 2018 based on the forecast of Ministry of Finance and Czech Statistical Office. It appears that the Czech economy growth is driven by domestic demand based on salary growth in 2017. An important role is played also by investment of governmental institutions that could grow again after the deep decline in 2016 while the private sector investment should accelerate slightly. The processing industry could grow by +5.0% in year-on-year comparison. Czech construction industry that hit the bottom in June 2017, could increase the production by +2.0% in year-on-year comparison. Foreign trade is also showing positive results.

It is expected that the lack of qualified employees will motivate the market players, not only companies, finally to investment growth which will lead to fast and efficient labour productivity. The

labour productivity has not been showing growth meeting the needs of growing competitiveness. In 2017, it will be necessary to reach a growth by +1.9% instead of +1.5% as forecasted so far.

In spite of global problems indicted by the development in 1H 2017, Czech Republic is basically prosperous and will develop even further. In the Czech Republic, there is a good law enforceability. As compared to other countries, it is not corrupted to such extent that could be seen as insurmountable. Risks presented to the Czech economy by current development are neither pleasant nor encouraging.

#### **4. FORESTRY AND WOOD PROCESSING INDUSTRY DEVELOPMENT IN 2016.**

The gross value added (GVA) of **forestry sector** recorded a year-on-year growth by +0.62% in 2010 current prices of forestry and timber harvest; in 2010, it grew only by +0.59%.

Harvest of both coniferous and hard-wood timber grew in 2015 and reached the total of 17.617 k m<sup>3</sup>. The total harvest and subsequent raw timber supplies in the Czech Republic was significantly influenced by the forest owners' obligation to carry out preferentially salvage felling and process bark beetle calamity timber caused by the continuous drought and warm weather in spruce stands mainly in Northern Moravia in 2016.

Processing broken trees and trees attacked by harmful agents, i.e. salvage felling, amounted to 9.4m m<sup>3</sup>. As for harvest residues in Czech forests, i.e. the biomass staying in the forest after harvest or stands thinning, the estimates show that they amounted to 1.9m m<sup>3</sup> in 2016. In 2016 same as in 2015, the salvage felling ration caused the deterioration of preconditions for planned forest management.

The 2016 total harvest caused the timber per capita to reach 1.66 m<sup>3</sup> as compared to 1.53 m<sup>3</sup> and 1.41 m<sup>3</sup> in 2015 and 2000, respectively.

Coniferous timber harvest amounted to 15,924 k m<sup>3</sup> in 2016, i.e. +10.7% more as in 2015, when the increment amounted only +6.8%. 2016 broad-leaved timber harvest amounted only to 1,693k m<sup>3</sup> as compared to 1,778k m<sup>3</sup> in 2015. As for the harvest of individual tree species, coniferous timber harvest grew year-on-year by 1.54m m<sup>3</sup>. Coniferous timber amounted to 90% of the total annual harvest. The ration of harvested coniferous and broad-leaved timber is defined mainly by the demand on the raw timber market as well as the structure of available stock in mature forest stands and processed salvage timber, mainly bark beetle timber.

In 2016, the increased supplies of raw timber from Czech forests were used by forest owners to boost exports to Austria and Germany as well as supplies to domestic wood-processing companies. The exports of raw timber (round wood, pulp wood, charcoal, fire wood, sawdust residues, waste wood, pellets and agglomerates) reached the total of 7,302k m<sup>3</sup> as compared to 6,508k m<sup>3</sup> in 2015 and 6,917k m<sup>3</sup> in 2014). In 2016, the export of raw timber grew year-on-year by +12.2%. Import of raw timber (in the same structure as export) amounted to the total of 2,907k m<sup>3</sup>, 3,305k m<sup>3</sup> and 3,531k m<sup>3</sup> in 2016, 2015 and 2014 respectively. The import of raw timber dropped year-on-year by +12% in 2016.

In the environment of growing offer of coniferous raw timber the prices of all coniferous assortments dropped gradually. Therefore, one can conclude that the average prices declined dramatically for the most frequent coniferous logs classified as III. A/B, C and D (i.e. for spruce: from 8.4% to 11.3%; pine: from 3.6% to 9.4%) in 2016 as compared to 2015. Even bigger year-on-year decrease was recorded in average prices for coniferous pulp: spruce and pine pulp wood by 20.9% and 20.7%, respectively.

As for broad-leaved logs in III. A/B, C and D class, the following prices recorded a growth: oak

by from 6.7% (III.C) to 13.2 % (III. A/B) and beech only for III.D class by 4.5%. As for broad-leaved pulp the prices grew as follows: for oak by 5.0% and beech by 1.6%, even though 2016 average oak and beech price amounted to 1,167 CZK/m<sup>3</sup> and 1,101 CZK/m<sup>3</sup>. The average price for coniferous and broad-leaved firewood dropped by 3.9% to 780 CZK/m<sup>3</sup> and 1.8% to 1,091 CZK/m<sup>3</sup>, respectively. After reaching the highest prices in Q1 2015, the prices were dropping till YE 2016. Nevertheless, timber without any sophisticated added value was directly exported from the Czech Republic also in 2016.

The active balance of foreign trade of raw timber grew year-on-year by 2,594m m<sup>3</sup> to 8,625m CZK in spite of price development. 99.0% of the total exports were supplied to EU-28 countries. The majority was exported to Austria, Germany and Slovakia, i.e. 49.2%, 40.2% and 2.9%, respectively. 87.9% of the total imports were supplied to EU-28 countries. The majority was imported from Slovakia, Poland and Germany, i.e. 36.2%, 28.4% and 14.4%, respectively

As for the domestic raw timber consumption, the year-on-year partial growth of raw timber and timber products consumption was influenced by its total volume, namely by 13,222k m<sup>3</sup> in 2016 as compared to 12,960k m<sup>3</sup> in 2015. Hence the domestic consumption of all raw timber grew year-on-year by +2%, however, in 2015 it was year-on-year by +7.2%.

Czech Republic is characterized by long-term high exports of raw timber, especially of round wood and sawn wood. Annual percentage e.g. of round wood export from the total harvest is high in the Czech Republic. In 2014 and 2015, the round wood export amounted to 38.4% and 34.9% of its total harvest, respectively. This is an adverse situation for the wood processing industry.

**b) As for wood processing industry**, it comprises sectors such as wood-processing sector (WPS or WPI) which process timber into products and which experienced the following situation as well development according to the Czech Statistical Office and Ministry of Industry in 2016:

Timber processing, production of timber and cork products, except for furniture manufacture reported a year-on-year increase of IPP growth dynamics by +3.4%. In 2015, this growth experienced a decline by -3.1%. The year-on-year increase of receipts from industrial activities grew by +1.9% in current process as compared to the 2015 decline by -4.5%. Receipts from direct export however dropped by -4.5% as compared to 2015.

Paper and paper products production has seen a slowdown. It reported a year-on-year IPP growth by +2.7% as compared to +6.4% in 2015, however as compared to growth decline by -6.9% in 2014. Receipts in current prices grew year-on-year only by 0.6% as compared to +7.5% in 2015. The receipts from direct export recorded a year-on-year decline by -1.6% as compared to their growth by 8.8% in 2015.

Printing and copying recorded carriers reported a year-on-year IPP growth by +13.9% as compared to the decline of -4.6% in 2015. Receipts in current prices grew year-on-year by +12.5% as compared to the decline of -5.9% in 2015. The receipts from direct export grew in year-on-year comparison by +0.4%, however they grew year-on-year by +9.9%.

Furniture manufacture reported a further year-on-year IPP growth, namely by +6.3% as compared to +5.3% in 2015. Furniture export grew year-on-year by +9.7% as compared to growth by 14.9% in 2015. Furniture import grew year-on-year by +13.4%; however this growth reached 15.8% in 2015. Receipts from economic activities in current prices grew year-on-year by +5.9% as compared to the +5.0% in 2015. The receipts from direct furniture export were not horrendous, however they grew by +2.1% as compared to +4.1% in 2015. The average price of exported furniture amounted to 79.71 CZK/kg and 78.08 CZK/kg in 2016 and 2015 respectively. The price of imported furniture amounted to 64.64 CZK/kg in 2016.

The Czech development shows that the furniture sector requires more efficient pro-export measures. The existing measures are not sufficient.

## **5. SELECTED INCENTIVES FOR TIMBER AND IMBER PRODUCT MARKET DEVELOPMENT**

### **a) 2016 Measures adopted for economic stimuli and legislation elated to forest management in the Czech Republic.**

In 2016, similarly to the previous years, neither economic nor other stimuli which would modify, limit or support free market had to be adopted in the Czech Republic. The market with all products manufactured in the Czech Republic, i.e. incl. the forest and wood-based products, observed effective EU legislation, free competition and followed the existing demand and offer.

As for the forestry-related legislation, 2 May 2016 the Government approved the Strategy of Ministry of Agriculture with 2030 Outlook by the Resolution no. 392/2016 Coll., which covers also the forestry sector.

Similarly to the past, both Government Regulation no. 30/2014 Coll. and Act no. 289/1995 Coll., on Forests and on Amendment of other Acts (Forestry Act), as amended, and Act no. 149/2003 Coll., on placing reproductive material of forest important species and artificial crossbreeds meant for forest afforestation on the market and on the Amendment of other Acts (Forest Species Reproductive Material Trading Act), as amended, were updated.

The Government Regulation no. 209/2016 Coll. lead to the update of Government Regulation 30/2014 Coll., on binding rules for subsidising forest management and selected game management activities. This update lead to the modification of annexes to the regulation stipulating the subsidy rates for forest management as well as the layout of applications for individual subsidies. The update also significantly influenced Sections 3 to 35a of the Government Regulation 30/2014 Coll. Regulating the individual subsidies for forest management, namely applicable conditions and parameters, deadlines for applications and the data required in an application.

In 201, Czech Government updated the Forest Species Reproductive Material Trading Act due to the update of Customs Act (243/2016 Coll.), namely the provisions under Section 31 par. 2 where it was revoked that the customs bodies shall proceed in line with the Customs Act when executing their powers and the footer 14 referring to Customs Act with Customs Office (Section 26 par. 1).

The Forest Species Reproductive Material Trading Act was also updated by the amendment of Forestry Act which updated certain acts in relation to the adoption of Act on service generating trust to electronic transactions, Act no. 106/1999 Coll., on free access to information, as amended and Act no. 121/2000 Coll., on copyright, rights related to copyright and on update of other acts (Copyright Act), as amended.

### **b) Measures mitigation climate change, supporting timber market adopted in 2016.**

Czech Republic maintained the same approach in 2016 as in the past. The Government Resolution approving the Strategy of Ministry of Agriculture with 2030 Outlook adopted on 2 May 2016 sets forth the basic principles and rules for sustainable forest management, describes the current and expected development of external conditions mainly in relation to climate change development. It reacts also to the growing social pressures on using renewable resources, where timber has a great potential to be developed.

The share of renewable resources has been growing recently, with the Czech Republic focusing rather on timber which has the biggest potential as renewable resource. The possibility to use other renewable resource are limited in the Czech Republic as the Czech Republic is located on the border

of various catchment areas on a “Europe’s roof”. Hence, Czech Republic has no major hydro energetic potential. The favourable and the major part of the hydro energetic potential has been already taken up in the Czech Republic, i.e. used. Hence, the power produced at water power plants can be increased by the maximum of 20%.

Wood processing industry is a big processor of energy derived from wood biomass; this is approx. 75% of the energy used for drying timber and producing boards. This energy is traditionally generated from timber residues that are not suitable for final products. However, one must bear in mind that burning timber biomass which is subsidised may create market misbalance with the timber used as raw material of energy source. Czech Republic is striving under various programmes for such renewable energy resources such as photovoltaics, photothermic, heat pumps, projects for changing lights, electro mobility, etc.

Czech Republic has adopted an approach to renewable resources allowing us get keep up as much as possible with worldwide trends.

#### **c) Governmental stimuli for producing energy from timber and its use within Czech economy in 2016.**

Czech Government has been supporting renewable energy production, i.e. also from timber. Timber energy comes from various sources: wood chips, bark, saw residues, side products of furniture and timber from used consumer goods. Moreover, the share of forest residues produced during harvest or thinning which is then used as biomass for energy production has been growing. In the Czech Republic, timber is not only used for local heating, which was common in the past, but it is used for industrial heat and timber power production.

A major processor of derived energy from biomass is the wood processing industry. As already described above, it processes 75% of the energy used by Czech industry directly for drying timber and producing boards. As for efficient and modern use of timber energy or energy from sawdust and harvest residues, the energy sector is supported both by Government and Ministries.

As for harvest residues, there are two groups dominating: wooden chips and splinters and wooden pellets. In 2016, Czech Republic produced 750.4k m<sup>3</sup> wooden chips and splinters as compared to 734.4k m<sup>3</sup> in 2015. In 2016, the exports of wooden chips and splinters amounted to 361.0k m<sup>3</sup> as compared to 374.8k m<sup>3</sup> in 2015. In 2016, the import of wooden chips and splinters amounted to 381.4k m<sup>3</sup> as compared to 374.4k m<sup>3</sup> in 2015.

In 2016, the Czech Republic produced 820k m<sup>3</sup> as compared to 813k m<sup>3</sup> in 2015. In 2016, the import of pellets amounted to 110.2k m<sup>3</sup> as compared to 117.0k m<sup>3</sup> in 2015. In 2016, the export of pellets amounted to 748.8k m<sup>3</sup> as compared to 714.7k m<sup>3</sup> in 2015. The majority of wooden pellets produced in Czech Republic is exported. As for EN plus A1 pellets, the export amounts almost to 100%. The ash produced is only 0.7%. The majority of certified pellets is exported mainly to Germany, Austria and Italy.

#### **d) How is the involvement of research and development supporting higher market efficiency in 2016.**

Czech wood processing sector contains the preconditions for efficient use of timber products in favour of domestic economy and export, namely own and also in the future sufficient high-quality raw material as well as qualified, experienced and productive labour force. Realisation of sophisticated products with high value added with internationally competitive price can deliver higher than the current 2.5% share of this sector on Czech GDP.

This area is covered by a document called “Competitiveness Analysis of the Czech Republic” produced by the Ministry of Industry. The analysis comprises the participation of research and development in the competitiveness issues. It describes actual tasks for bodies, organisations,

enterprises and institutions for higher market efficiency and it comprises the analysis for higher market efficiency in selected areas incl. actual initiatives and proposals.

This document is followed by the International Competitiveness Strategy. This document focuses on long-term development priorities of Czech economy from international perspective. Hence, it is drafted in a way allowing the priorities to be adapted both to changes in global economy and the position of open and export-dependent Czech economy. It relates also to the introduction of changes relating to fourth industrial revolution. Ministries and Czech Government are informing Czech companies immediately about intended changes relating to fourth industrial revolution that are part of documents of the Czech Republic, EU and other countries.

**e) Measures for increasing responsibility of social associations in 2016.**

These issues were described in details in 2015 report. There have been no major changes since the last report.

Over the last year and basically since the split of former Czechoslovakia, social associations as well as social responsibility did not require any changes. They are regulated according to the effective legislation all over the country. As for forestry. These issues are incorporated in the National Forestry Programme as a task to support the improvement social situation of forestry workers and employees.

**f) Measures adopted by the Government relating to research and development for supporting market with timber and timber products in 2016.**

These measures are not forgotten in the Czech Republic. Not even a small group of processors are entrusted with these measures. Currently, the following institutions are entrusted with research related to boosting market with timber and timber products: Forest and Game Management Institute, Faculty of Forestry and Wood Sciences and Faculty of Environmental Sciences of Czech University of Life Sciences, and Faculty of Forestry and Wood Technology Mendel University Brno, Academy of Science in České Budějovice and Brno and private research institutions.

The declaration issued with the research project of European Forest Institute, called Intergrate, confirms the long lasting cooperation between both countries based on the Strategic Dialogue between the Czech Republic and Germany and enhances the use of scientific knowledge when producing policies and making forest and trade-related decisions both on national and EU level. It supports also the strategy for efficient preservation and support of biodiversity in forests and for providing several other ecosystem services.

The basic topics of basic, technological and applied research focusing on boosting the market with timber and timber products is focusing on strengthening the sustainability of competitiveness and on forestry development, improvement of new approach to planning and on realistic solutions and optimisation of skidding technologies in forests as well as on enhancing ecological management in forests and forest management.

As for wood processing, professional organisations and central bodies, if no own research is required, focus mainly on development of wood processing production and the issues of efficiency and effectivity of timber products market. The focus was directed to incentives for raising interest for modern wooden constructions in the Czech Republic, to introducing new solutions method and wooden constructions and its elements in order to enhance automated and integrated production methods. Increased and sophisticated solutions of the most realistic possibilities to improve efficiency and effectiveness of wood processing sectors, mainly of SME, shows in growing number of timber buildings.

## **6. Development of market with raw timber in the Czech Republic in 2016**

### **a) Raw timber market in 2016.**

The total harvest and supplies to the internal market of coniferous and broad-leaved timber amounted to 17,617k m<sup>3</sup> as compared to 16,163k m<sup>3</sup> in 2015. The growing harvest is caused mainly by salvage felling which amounted to 4.5m m<sup>3</sup> and 8.5m m<sup>3</sup> in 2014 and 2016, respectively.

The share of coniferous timber on the total harvest was dropping, namely from 11% in 2015 to 9.6% in 2016. In 2016 15,924k m<sup>3</sup> were delivered to the internal market.

As for foreign trade with raw timber, in 2016 the total export of this commodity (round wood, pulp wood, charcoal, fire wood, sawdust residues, waste wood, pellets and agglomerates) amounted to 7,302k m<sup>3</sup>.

The import of all raw timber, i.e. (round wood, pulp wood, charcoal, fire wood, sawdust residues, waste wood, pellets and agglomerates, amounted to 2,907k m<sup>3</sup>. The export and import of coniferous and broad-leaved round wood amounted to 5,079k m<sup>3</sup> and 1,500k m<sup>3</sup>, respectively.

In spite of growing export of coniferous round wood over the last three years, its domestic consumption was growing, namely in 2015, by +559k m<sup>3</sup> in year-on-year comparison to 6,500k m<sup>3</sup>, and by +263k m<sup>3</sup> to 6,763k m<sup>3</sup> in 2016.

**b) Market with round wood, incl. pole and mining timber 2016.** In 2016, the total production of coniferous and broad-leaved round wood amounted to 10,341k m<sup>3</sup>, as compared to 8,964k m<sup>3</sup> and 8,548k m<sup>3</sup> in 2015 and 2014 respectively. The year-on-year growth amounted to 15.4% as compared to +4.9% in 2015. The coniferous round wood production and supplies to market amounted 9,869k m<sup>3</sup>, i.e. a year-on-year growth by 16.6%. The growth of this commodity amounted to 6.5% in 2015. The production of broad-leaved round wood amounted to 472k m<sup>3</sup> in 2016 as compared to 496 k m<sup>3</sup> and 593k m<sup>3</sup> in 2015 and 2014 respectively.

The export of coniferous and broad-leaved round wood amounted to 3,872k m<sup>3</sup> in 2016, as compared to 3,131k m<sup>3</sup> and 3,214k m<sup>3</sup> in 2015 and 2014 respectively. The import of coniferous and broad-leaved round wood amounted to 866k m<sup>3</sup> in 2016, as compared to 1,132k m<sup>3</sup> and 1,193k m<sup>3</sup> in 2015 and 2014 respectively.

As for coniferous round wood, the export amounted to 3,806k m<sup>3</sup> in 2016 as compared to 2,948k m<sup>3</sup> and 3,058k m<sup>3</sup> in 2015 and 2014 respectively. The import of coniferous round wood amounted to 700k m<sup>3</sup> in 2016, as compared to 980k m<sup>3</sup> and 1,044k m<sup>3</sup> in 2015 and 2014 respectively. The import amounted to 7.1% in 2016 as compared to 11.6% and 13.1% of the total harvest and production in 2015 and 2014 respectively.

Domestic consumption of coniferous round wood amounted to 6,763k m<sup>3</sup> in 2016 as compared to 6,500 m<sup>3</sup> and 5,941k m<sup>3</sup> in 2015 and 2014 respectively.

Domestic consumption of broad-leaved round wood amounted to 572k m<sup>3</sup> in 2016 as compared to 465k m<sup>3</sup> and 586k m<sup>3</sup> in 2015 and 2014 respectively.

**c) Market with pulp wood incl. ground wood in 2016.** The total production of coniferous and broad-leaved pulp wood amounted to 4,932k m<sup>3</sup> in 2016 as compared to 4,863k m<sup>3</sup> and 4,817k m<sup>3</sup> in 2015 and 2014 respectively. The year-on-year increment amounted to +1.2% in 2016.

The total production of coniferous pulp wood amounted to 4,505k m<sup>3</sup> in 2016 as compared to 4,403k m<sup>3</sup> in 2015, i.e. a year-on-year growth by +2.3%. The total harvest of broad-leaved pulp wood amounted to 427k m<sup>3</sup> in 2016 as compared to 460km<sup>3</sup> in 2015, i.e. a year-on-year decline by -7.2%.

The import of coniferous pulp wood amounted to 800k m<sup>3</sup> in 2016 as compared to 1,000k m<sup>3</sup> in 2015. However, the import amounted to only 749k m<sup>3</sup> in 2012. The year-on-year decline amounted to -20% between 2015 and 2016. As for export of this commodity, it amounted to 1,273k m<sup>3</sup> in 2016 as compared to 1,294k m<sup>3</sup> in 2015.



As for broad-leaved pulp wood, the import amounted to 129k m<sup>3</sup> in 2016 as compared to 197k m<sup>3</sup> in 2015, i.e. a year-on-year decline by significant -30.5%. The export amounted to 81 m<sup>3</sup> in 2016 as compared to 105k m<sup>3</sup> in 2015, i.e. a year-on-year decline by 24k m<sup>3</sup> (23%).

In spite of growing production, the domestic consumption of coniferous pulp wood amounted to only 4,032k m<sup>3</sup> in 2016, i.e. a year-on-year decline by -1.9%. The domestic consumption of broad-leaved pulp wood amounted 475k m<sup>3</sup> in 2016 as compared to 552k m<sup>3</sup> in 2015, i.e. a year-on-year decline by -13.9%.

**d) Breakdown of coniferous and broad-leaved round wood in 2016.** The production of coniferous and broad-leaved sawn wood recorded a year-on-year growth by 150k m<sup>3</sup>. The production amounted to 4,300k m<sup>3</sup> in 2016 as compared to 4,150k m<sup>3</sup> in 2015. The demand for sawn wood persisted abroad and the consumption grew also in the Czech Republic, i.e. by 37k m<sup>3</sup>.

The prices of coniferous and broad-leaved sawn wood tended to decline in 2016. In spite of partially dropping prices of coniferous round wood and sawn wood, sawmills in Germany and Austria still have higher prices as sawn wood producers in Northern and Eastern Europe. Big sawmills in the Czech Republic with annual breakdown over 300k m<sup>3</sup> such as Stora Enso Timber, s. r. o., Ždírec and Doubravou, Stora Enso Timber Planá s. r. o., Mayer-Melnhof Holz Paskov, Pila Lukavec and Pila Javořice and other Czech sawmills are directly dependant on sawn wood export. However, the export amounted to 3,528k m<sup>3</sup> out of 4,067k m<sup>3</sup>. It was necessary to import 629k m<sup>3</sup> to cover the Czech domestic consumption of 1,168k m<sup>3</sup>.

The total breakdown of coniferous and broad-leaved round wood amounted to 7,200k m<sup>3</sup> and the production of coniferous and broad-leaved sawn wood amounted to 4,067k m<sup>3</sup> and 233k m<sup>3</sup> respectively. This means a year-on-year growth of coniferous and broad-leaved sawn wood by 142k m<sup>3</sup>. The export and import of coniferous and broad-leaved sawn wood recorded a year-on-year growth by 138k m<sup>3</sup> and by 16k m<sup>3</sup>. The partial growth of domestic consumption amounted to 28k m<sup>3</sup>.

**e) Market with fuel wood in the Czech Republic in 2016.** The total production of coniferous and broad-leaved fuel wood amounted to 2,344k m<sup>3</sup> in 2016 as compared to 2,336k m<sup>3</sup> in 2015. The volumes of this commodity fluctuate only in reaction to winter temperatures in the Czech Republic and to foreign trade.

The total production of coniferous fuel wood amounted to 1,550k m<sup>3</sup> in 2016 as compared to 1,514 m<sup>3</sup> in 2015. It amounted to 1,166k m<sup>3</sup> and 1,267k m<sup>3</sup> in 2014 and 2013 respectively.

Domestic consumption of fuel wood amounted to 2,174k m<sup>3</sup> in 2016 as compared to 2,194k m<sup>3</sup> in 2015. The Czech market was fully saturated in all the years.

## **7. MARKET WITH OTHER WOODEN PRODUCTS IN THE CZECH REPUBLIC IN 2016**

In the Czech Republic, the market with sophisticated products concerns basically the market with agglomerated products.

As for the production of agglomerated material, there were two major market players, along with the small ones, namely KRONOSPAN CR, spol. s. r. o. in Jihlava and Dřevozpracující družstvo Lukavec in Lukavec. The production of particle boards and plywood grew by +6.9% and 17.8% respectively in year-on-year comparison.

The domestic production of wooden pellets for energy purposes recorded a major growth in the

Czech Republic; the production of certified EN plus pellets amounted to 311k tons (pellets with highest quality with year-on-year growth by 64k m<sup>3</sup>); the production of uncertified pellets amounted to 21k tons. The biggest pellet producers are the following companies: Mayer-Melnhof in Paskov, Pfeifer Holz, Stora Enso Wood Products Ždírec, s.r.o. and Biomac that basically use sawdust and shavings from own operations. One third of pellets is consumed by domestic market (number of boilers burning pellets grew to 25k) and the remaining 2/3 of the production were designed for export to Italy, Austria and Germany.

**a) Market with particle boards incl. OSB in 2016.** The production of this commodity grew year-on-year by 6.9% and amounted to 1,112k m<sup>3</sup>. In the Czech Republic, the production of this agglomerated materials has been growing, mainly by growing export.

The export of particle boards incl. OSB amounted to 1,442k m<sup>3</sup> in 2016 as compared to 1,390k m<sup>3</sup> in 2015. The import of particle boards incl. OSB amounted to 729k m<sup>3</sup> in 2016 as compared to 743k m<sup>3</sup> in 2015, i.e. the import recorded a decline by -1.9% and export a growth by +3.7%.

The domestic consumption has been growing in the Czech Republic. In 2016, 2015, and 2014 there was a year-on-year growth by +1.5% to 399k m<sup>3</sup>, +2.3% to 393k m<sup>3</sup>, +14.6% to 384k m<sup>3</sup> as compared to 335k m<sup>3</sup> in 2013 respectively.

**b) Market with fibreboards in 2016.** The production of fibre board is traditionally low as compared to particle boards. In 2016, the production dropped to 32k m<sup>3</sup> as compared to 44k m<sup>3</sup> in 2015. This generates a problem as the low production requires import 7.5 times higher as the production.

Hence, the import of fibreboards amounted to 240k m<sup>3</sup> in 2016 as compared to 222k m<sup>3</sup> in 2015, i.e. a growth by +8.1%. The export amounted to 99k m<sup>3</sup> in 2016 as compared to 93k m<sup>3</sup> in 2015.

The annual domestic consumption amounted to 173k m<sup>3</sup> in 2016, i.e. the same figure as in 2015. However, a decline by -13k m<sup>3</sup> as compared to 2014.

**c) Market with plywood in 2016.** Plywood production has been growing recently. E.g. in 2012, 2013, 2014, 2015 and 2016 the production amounted to 178k m<sup>3</sup>, 180k m<sup>3</sup>, 181k m<sup>3</sup>, 180k m<sup>3</sup> and 212k m<sup>3</sup>.

The import of plywood amounted to 93k m<sup>3</sup> in 2016 as compared to 88k m<sup>3</sup> and 82k m<sup>3</sup> in 2015 and 2014 respectively. The export amounted to 161k m<sup>3</sup> in 2016 as compared to 96k m<sup>3</sup> in 2015. The export amounted to 75.4% and 68.9% of the total production in 2016 and 2015 respectively.

The domestic consumption of plywood is quite good and amounted to 67.9% of the total production (144k m<sup>3</sup>) in 2016. In 2015, the annual domestic consumption was the same, i.e. 144k m<sup>3</sup> and 80% of the production.

## **8. WOOD PULP AND PAPER IN THE CZECH REPUBLIC IN 2016**

The pulp and paper sector is administered by international chains of value and it has not been developing according to the Czech consumers' needs lately.

In 2016, the total consumption of wood for paper and pulp production amounted to 3,620k m<sup>3</sup> of raw coniferous timber thereof 2,350k m<sup>3</sup> of coniferous pulp wood (thereof 750k m<sup>3</sup> imported) and also 1,270k m<sup>3</sup> of coniferous chips and splinters (again thereof 110k m<sup>3</sup> imported). In 2015 and 2014, the consumption of wood for paper and pulp production amounted to 3,620k m<sup>3</sup> and 4,010k m<sup>3</sup> of raw coniferous timber.

In 2016, the pulp and paper industry produced 448.5k tons of paper cellulose thereof 445k tons of chemical cellulose. The production of paper cellulose recorded a year-on-year growth by 13.3k tons. The industry also produced viscose cellulose, namely 261.1k tons and 248.6k tons in 2016 and 2015 respectively. This viscose cellulose is produced by the Austrian company of Lenzing in its subsidiary of Biocel Paskov. Here, the original technology of paper cellulose production was updated to so called biorefining by CO<sub>2</sub> and application of ultraviolet radiation. Lenzing is planning to increase the production up to 285k tons/year in 2017.

The paper, cardboard and paperboard production recorded a year-on-year growth by 55k tons and reached the total of 795k tons, i.e. by +7.4%. It is to be pointed out that the structure of Czech paper and pulp production does not meet the needs of domestic demand. The paper consumption exceeds the capacities of paper factories; as the production does not meet the needs of the demand, Czech Republic has to import this commodity, mainly printing and graphical paper, wrapping material and paper.

Based on data of Association of Czech Paper Industry, the total consumption of paper, cardboard and paperboard amounted to 1,476m tons. The production was only 795k tons incl. re-export, 812k tons were exported, so 1,493k tons were imported to satisfy the domestic consumption of paper products. This inefficiency results in major loss in the foreign trade balance of the Czech Republic.

However, the paper consumption has been growing, not only in the Czech Republic. The per capita paper consumption amounts to 130-150 kg. The year-on-year growth of recycling is on average the same, namely 10%. In 2016, 1,004k tons of old paper were returned for recycling, i.e. 68.2% of domestic consumption of paper, cardboard and paperboard, thereof 23% were recycled in the Czech Republic and the rest was exported.

## **9. FOREST CERTIFICATION IN THE CZECH REPUBLIC**

In the Czech Republic, there are two certification systems - FSC (Forest Stewardship Council) and PEFC (Programme for the Endorsement of Forest Certification Schemes). Both systems have one thing in common, namely the principle of sustainable forest management.

### **PEFC Czech Republic**

In the Czech Republic, over 70% of all forests are certified. In 2016, 1,780,259 ha of forests were certified under PEFC. This means that 450 individual forest owners and 231 wood-processing and trading companies are participating in PEFC Czech Republic.

Companies and entities importing or placing timber on the market in the Czech Republic must have due diligence system to combat illegal activities. The European Union Timber Regulation regulates import and placement of illegally harvested timber and timber products on the EU market. In the Czech Republic, this Regulations applies both to domestic timber production and to timber and timber products imported. Czech Republic coped with these issues successfully.

Basically all major Czech forest owners – regardless the ownership type and size of estate – showed interest in PEFC certification and in acquiring independent confirmation of correct forest management.

### **FSC® Czech Republic**

FSC® ČR certifies only 2% of all Czech forests, i.e. 52,527 ha of forests. FSC® ČR provided to forest owners, foresters and wood processors in the Czech Republic a universal and

supportive information service related to the certification. It also focuses on education and raising awareness of consumers’.

195 certificates were issued in relation to C-o-C.

Recently the IKEA-related issues were discussed, when IKEA without deep professional discussion with Czech representatives of forest and wood-processing sector changed its business terms and conditions for suppliers. IKEA will use only FSC-certified timber by 2020, i.e. timber under the marginal certification system in the Czech Republic. This measures would mean that companies supplying Czech products to IKEA would have to make extensive investments into FSC certification, mainly because FSC being only marginal in the Czech Republic, they would have to import FSC-certified timber e.g. from Poland.

## **10. WOOD ENERGY IN THE Czech Republic**

It is generally known that the Czech Ministry of Trade and Industry derived from the Directive 2009/28/EC of the European Parliament and the Council on the promotion of the use of energy from renewable sources the National Programme for Energy Savings and Use of Renewable Resources, so called EFEKT programme. It has a long tradition in the Czech Republic and it is one of the tools providing for compliance with international commitments, mainly reduction of the share of energy consumption and GDP by 1% per year. It defined goals within reduction of energetic demands and goals for use of renewable and secondary energy resources.

In the Czech Republic, the contribution of individual resources to the commitment of the share of final energy consumption from renewable resources in %J amounted to 27.4% of electricity from bio gas, 22.4% of electricity from water power plants, 23% from electricity from photovoltaic power plants, 21.2% of electricity from biomass, 5% of electricity of wind power plants and 1% of electricity from communal waste in 2016.

The share of final consumption on electricity from renewable resources amounted to 15.1% in 2015 and the estimates for 2016 indicate the share of 16%. As for the consumption on transportation, it was around 14% and for heating around 20%, i.e. similar figures as in 2015.

The estimated supplies of harvest residues from Czech forests amounted to 1.9m m<sup>3</sup> of biomass in 2016. The majority of this biomass is used for heat production, i.e. for supplies to homes and households, health care providers and industrial, mainly wood-processing companies.

## **11. EVALUATING CARBON FOOTPRINT IN THE CZECH REPUBLIC**

In the Czech Republic, the We Monitor/Reduce CO<sub>2</sub> Programme was established. It is a facultative tool which supports the participation of companies, towns and other entities in climate conservation activities, i.e. concrete activities for monitoring carbon footprint, and it motivates the entities to implement own mitigating measures.

Four public institutions, dominated by Ministry of Environment, participated in the programme. The Ministry has calculated its carbon footprint, selected saving projects and defined goals and next steps for the next years. Large and medium-sized enterprises from various sectors prevailed in the programme above in 2016.

Companies registered in the project comprise wood-processing enterprises as well as enterprises producing wrapping material and enterprises within food and building industry; also the Airport Prague participated in the project and calculated its carbon footprint. In 2016, the Airport succeeded in reducing emission by 14%. It implemented active energy management, selected

energy saving projects and set its goal, namely to reduce its carbon footprint by 9% in 2017 as compared to 2009. The company of Skanska, a.s., meet the criteria for participating in the programme. It prepared and implemented offset project with public benefit that allows support of actual climate conservation projects in towns. Also the banking and automotive sectors have their first representatives. Similarly entities from public sector, such as towns, local authorities and NGOs, participated in the programme.

Measuring the carbon footprint is common praxis abroad. In the Czech Republic, only 2/3 of companies with foreign owner commit themselves to reduce emissions of greenhouse gas. 86% of these companies reflect the commitment in their strategies, action plans or policies. Czech Government believes that raising awareness about carbon footprint in the Czech Republic will have other effects but its active reduction, namely mitigating impacts of our activities on climate change.

