Annual Report of the European Sawmill Industry

2017/2018

EOS 60 YEARS
EUROPEAN ORGANISATION OF THE SAWMILL INDUSTRY

A Japanese company is set to build a skyscraper made of 90% wood in Tokyo, which will make it the world's tallest wooden skyscraper upon completion. The wooden high-rise, named "W350", will be a "braced tube structure" at 350 meters (1,150 ft) tall and 70 stories. To construct it, 180,000 cubic meters of wood will be combined with the other 10% of the building's makeup—steel.

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Foreword

by Sampsa J. Auvinen, EOS President and Director, Bergs Timber (publ) AB

CELEBRATING OUR PAST FOR INSPIRING OUR FUTURE.

This year we celebrate the 60th anniversary of the European Organisation of the Sawmill Industry.

As President, guiding an association with 60 years of history is an honour and a tremendous challenge. EOS is the united voice of an innovative, sustainable and forward-looking manufacturing industry. In EOS, decisions are taken on unanimous basis because we believe that no interest or concern should be left behind. Today, I renew the European Organisation of the Sawmill Industry's commitment to develop the timber industry's potentialities for the mitigation of climate change, substitution of non-renewable materials and energy and the development of a sustainable circular economy.

Now we are facing a time framework that has spanned a long period of success and growth, with a pause during the crisis years, and now a second youth. The market offers great opportunity. The European Sawmilling Industry has enjoyed during the past years good times. Demand for our products is globally strong. Our European home markets have experienced steady growth in construction activity and new markets like China and also US have also opened for us.

In addition to the economic overview of the wood markets and the European sawn timber production and consumption data collection (*available in chapters 2, 3 and 4*), Chapter 7 of this Annual Report, is dedicated to the International Softwood and Hardwood Conferences co-organised by EOS together with the European Timber Trade Federation on October and November 2017. The International Conferences reports offer an insight of the global timber markets and trends focusing on some key Countries.

The expected rise in demand for coniferous wood, coupled with a decline in the proportion of this type of wood in forests, could lead in the medium and long-term to bottlenecks and, by extension, to sawmills and timber companies moving elsewhere. This obviously would pose a threat to jobs and economic strength for our Industry. For this reason, EOS actively follows and takes part in all relevant discussion about wood availability and supply at EU level. Pressing problems are currently faced by the European hardwood sawmill companies who are experiencing first-hand the export of high quality hardwood logs, such as oak, outside Europe. In the framework of the Revision of the European Forestry Strategy, EOS is advocating for appropriate solutions aiming at guaranteeing that high quality wood supply from the region's forests is sufficient to satisfy, on a sustainable basis, local industries' needs and society's needs.

One of the major environmental topics of the sawmilling and wood products manufacturing is related to the management of forest resources. Issues related to sustainable forestry practices are addressed by our Organisation in several European fora, including Forest Europe. I am glad to inform, that since November 2017, the European Organization of the Sawmill Industry obtained the status of observer in Forest Europe: the pan-European voluntary high-level political process for dialogue and cooperation on forest policies in Europe. EOS promotes the use of wood products in correlation with the importance of sustainable forest management as part of our efforts to protect the environment, ensure biodiversity, tackle climate change.

The European Union has long claimed, with some justification, to be a leader in international climate policy.

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Its policy activities in this area, are having a significant influence within the European sawmill sector. Chapter 6 of this Annual Report edition offers to the readers an overview of the two major European proposals recently discussed: the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry (LULUCF) into the 2030 climate and energy framework and the proposal for a recast of the directive on the promotion of renewable energy sources.

The main issue to be negotiated for the Regulation on land use, land use change and forestry concerned the accounting rules for forests. According to the decision, each Member State uses the agreed criteria to set a reference level for forest land for the periods 2021–2025 and 2026–2030. EOS is glad that the reference level is not based on the earlier forest use intensity, but the criterion is about maintaining and strengthening the carbon sequestration capacity of forests in the long term, as set out in the Paris Agreement. Furthermore, the new LULUCF recognises the importance of Harvested Wood Products (HWP) in climate change mitigation including the corralled substitution effect.

In Europe politicians agree on the need to use dwindling non-renewable resources more efficiently and to replace them -when possible- with renewable ones, both in the materials and energy applications. The promotion of renewable energies, including wood, is a central part of energy and climate change policies all over the Region. In the framework of the policy development on the renewable energy, forces have been joined with representatives of European forest owners and managers, farmers and their cooperatives, forest workers, contractors and professionals and the bioenergy Industry.

On occasion of this 60th Anniversary, one more time, I wish to reiterate my sincere gratitude for the EOS Members support and keen interest in the European policy development and always cooperative spirit.

Sampsa J. Auvinen

EOS President
Director, Bergs Timber (publ) AB

1. General Economic Situation

Sources of this chapter: the European Commission Economic Forecast Winter 2018 and the OECD (Organisation for Economic Co-operation and Development) Economic Outlooks. Currencies exchange rates have been taken from the European Central Bank website.

1.1 Global Overview with focus on the EU

1.1.1 Global Economy Continues to Firm

Momentum in the global economy remains strong, as the broad-based cyclical upswing continues, buoyed by the rebound in investment and trade, still favourable financial conditions and a supportive policy mix. Higher commodity prices are also proving supportive for commodity exporters. Global GDP growth outside the EU is now expected at 4.1% in both 2018 and 2019, compared to 3.8% in 2017. Upward revisions since the autumn are mostly concentrated in advanced economies, particularly the US, but growth prospects have also improved for some emerging markets, including China. Sustained, robust momentum in the near term is consistent with the broad-based strength in business and household confidence across most emerging markets and advanced economies. Conversely, **geopolitic risk and trade conflicts that at this writing (April 2018) cannot be ruled out could jeopardize this relatively rosy picture.**

In the US, economic activity remains buoyant, supported by a number of benign factors, namely easy financial conditions, a weaker dollar, expansion in the energy sector, and strong external demand. The recent US tax reform is expected to add to this momentum, generating a fiscal stimulus of around 1½ pps. of GDP over 2018-2019, and boosting economic growth further in the near term due to higher business investment, as well as household spending. However, given the advanced stage of the cycle, some of the stimulus may be offset by faster monetary policy normalisation and higher interest rates than assumed earlier. Given the temporary nature and heavy frontloading of some tax reform elements and the current above potential growth, US growth might turn lower in the longer term. As regards emerging markets, the near-term growth outlook has also improved slightly, including in commodity exporters and China, where export growth is buoyant and service sector momentum has strengthened. Global import volumes (outside the EU) are expected to have grown by 4.6% (y-o-y) in 2017 (compared to 1.3% in 2016), driven by solid imports in advanced economies, and buoyant trade across Asia and most other emerging market economies. The momentum is expected to carry into 2018 and to moderate only slightly in 2019. Global import growth is expected to pick up by 4.7% in 2018 and 4.5% in 2019 (up from 4.1% for both years in the autumn forecast). This reflects an upward revision to the outlook for global GDP growth and a further uptick in the elasticity of trade, largely driven by stronger investment dynamics.

The extension of an agreement on production cuts between OPEC and Russia, as well as geopolitical tensions in the Middle East, lifted Brent oil prices to nearly 70 USD/barrel (henceforth bbl) in January, considerably higher than expected some months ago. Further price rises, however, are projected to be more limited as higher oil prices would weigh on global demand growth and non-OPEC producers (notably the US) are expected to increase output. Based on futures markets, prices for Brent oil are assumed to increase by an average of 24.6%to 68.3 USD/bbl in 2018 compared to 2017, before falling by 5.9% to 64.2 USD/bbl in 2019.

1.1.2 Financial Conditions Remain Supportive

Since autumn 2017, monetary policy divergence across advanced economies has widened. At its recent meetings, the ECB Governing Council decided to keep unchanged its forward guidance on policy rates. It also decided to recalibrate its asset purchase programme (henceforth APP), extending the expected duration of purchases to at least September 2018 and reducing the size of its monthly purchases to EUR 30bn from January 2018 onwards. In January 2018, the Governing Council confirmed that an ample degree of monetary stimulus remained necessary. In December, the Bank of Japan re-affirmed its strong commitment to its inflation target and decided to maintain its highly accommodative monetary policy stance. By contrast, the US Federal Reserve (Fed) in December raised

its target range for the federal fund rate for the third time in a year, to 1.25-1.50%. At their monetary policy meeting, US policymakers expected that three additional interest rate hikes would be warranted in 2018, signalling a somewhat faster pace of normalisation than expected by markets. As widely anticipated, the Bank of England raised rates for the first time in 10 years, delivering a 25bps. hike to 0.5%. Looking ahead, the Bank signalled that any future increases in the policy rate would likely be gradual and limited.

The euro has appreciated in nominal effective terms over the last few months, driven by stronger-than-expected economic growth, lower political uncertainty, and expectations of a faster pace of monetary policy normalisation.

In the sovereign bond markets, benchmark yields in the EU have picked up since the turn of the year but remain very low. Most sovereign bond spreads have continued to narrow as the economic and fiscal outlook has strengthened. In the US, 10-year Treasury yields have moved up. In the EU, real yields, at least of the highest rated sovereigns, remain negative across the maturity spectrum. European equity indices further strengthened but have underperformed global peers, as the appreciation of the euro has clouded the corporate earnings outlook. US stock indices have recently dropped from the record highs they had reached on the back of the government's tax package and strong corporate earnings.

With the economic expansion broadening and interest rates persistently low, global investors remain in a search-for-yield mode. As a result, the compensation for inflation and credit risks has been squeezed. Consistent messaging from the Fed and the ECB that the normalisation of monetary policy would be prudent, gradual and well communicated in advance has reassured risk-on investors. Based on the most reliable valuation measures, US stocks seem pricy. While the low interest rate environment should per se favour high equity valuations, valuations shall be seen in the context of lower growth prospects in the medium term as the cycle matures and the impact of population ageing becomes stronger. At the same time, profit margins are unlikely to indefinitely remain as high as they are now. European stock markets, by contrast, appear more moderately valued.

Bank lending in the euro area has continued to expand. Last year, loans to households grew by 2.8% and loans to non-financial corporations by 2.9%. The January 2018 ECB Bank Lending Survey also provides positive signals consistent with the ongoing recovery in bank lending volumes, with competitive pressures and risk perceptions having an easing impact on credit standards. Looking towards 2018-Q1, banks expect a net easing of credit standards and increased net demand across all loan segments. Market funding continued to expand in the euro area with positive monthly net issuance of both equity and corporate bonds. Furthermore, the euro area corporate sector continues to generate sizeable internal funds, which could potentially be used to support investment spending.

1.1.3 Expansion making headway

In 2017-Q3, GDP grew by 0.7% (quarter-on-quarter, henceforth q-o-q) in both the euro area and the EU, the same as in the previous quarter and slightly above earlier expectations. The year-on-year rate stood at its highest since 2011-Q1. According to Eurostat's preliminary flash estimate, the European economy ended 2017 on a strong note, growing by 0.6% (q-o-q) in the last quarter. The EU and euro area economies have now been growing by at least 0.6% for five consecutive quarters.

For the 2017 year as a whole, GDP is estimated to have grown by 2.4% in both the euro area and the EU, the highest rate in 10 years. The upward revision reflects stronger-than-expected growth in the second half of the year, well above potential.

The robust and broad-based nature of the expansion, across sectors and countries, benefited from high consumer and business confidence, an improving labour market, continued policy support, and stronger global output and trade.

Domestic demand remained the main growth engine over the first three quarters of 2017 although net trade made the largest contribution in the third quarter (+0.5 percentage points - pps. - in the euro area). This development may be less significant than it seems, however, because domestic demand remains the main driver when highly volatile Irish data is excluded. Gross fixed capital formation in Ireland dropped by 36% (q-o-q) in 2017-Q3, which led to a contraction of euro area investment of 0.3% (q-o-q). Excluding Ireland, investment dynamics in the euro area would have remained strong, growing at a rate of at least 1% (q-o-q) for the third consecutive quarter. The annual growth rate of investment in the euro area, excluding Ireland, is estimated to have reached 4.5%, its highest since 2007-Q3. Private consumption expenditure continued to benefit from

the improved performance of the labour market, although it lost some momentum in the third quarter when growth slipped to 0.4% (q-o-q) compared to 0.6% in the preceding quarter. Expenditure on non-durable goods and services moderated appreciably whereas household consumption of durable goods picked up compared to the previous quarter. At the same time, government consumption growth remained stable in the euro area at 0.3%, staying in the range of 0.2% ±0.1 pps. for the sixth consecutive quarter. Despite a stronger euro, euro area exports rose by 1.5% q-o-q in 2017-Q3 (after +1.1% in 2017-Q2), in line with the higher momentum in world trade. Importantly, it was also the highest annual rate since the first half of 2015. Imports increased by 0.5% (after +1.6% in 2017-Q2), also reflecting a sharp contraction of Irish imports (-10.9% q-o-q).

Signals from recent surveys are consistent with continued strong growth in the near term. The European Commission's Economic Sentiment Indicator (ESI) rose considerably in the fourth quarter of 2017, reaching its highest levels since 2000 in the euro area and the EU. In January 2018, the ESI weakened slightly in the euro area and the EU for the first time in eight months. This softening was driven by lower confidence in services and retail trade. Despite this slight decline, the ESI remains above its 2017-Q4 average, its highest in 17 years. In parallel, the euro area Flash Composite Output Purchasing Managers' Index (PMI) increased in January to its highest reading in nearly 12 years, mostly on the back of the fastest acceleration of service sector growth since August 2007.

The growth outlook for 2018 has been revised upwards compared to the autumn forecast. Diminishing uncertainty, improving sentiment and the synchronous rebound outside Europe led to a stronger-than-expected expansion in the second half of last year. With a stronger carry-over from 2017 and continued growth momentum in early 2018, GDP is now expected to grow by 2.3% this year in both the euro area and the EU as a whole. While growth is still forecast to moderate gradually, this now looks likely to set in later than previously expected. Over the forecast horizon, the expansion is set to remain solid, broad-based across sectors and countries, and increasingly self-sustained. As in autumn, it is expected to continue benefiting from a supportive policy mix, with monetary policy remaining overall accommodative, and a broadly neutral fiscal policy stance in the euro area as whole. Although the output gap is set to become positive, the remaining slack in the labour market offers scope for solid growth to continue. Moreover, all euro area countries are set to grow in the forecast years, with growth differentials narrowing further.

Domestic demand is set to remain the main growth engine in 2018, with private consumption continuing to grow at a robust pace and investment continuing to recover. Exports are also expected to support the expansion going forward, on the back of strong external demand. With job creation expected to ease from its current brisk pace, the resulting slowdown in household purchasing power growth implies a slight moderation in momentum towards 2019.

Private consumption should continue benefitting from high consumer confidence and labour market improvements this year and next, though at a slower pace. Lower deleveraging needs, as well as past increases in house prices could further support the near-term outlook. Investment should continue to grow at a robust pace this year and next. According to the European Commission's latest investment survey, investment volumes in the euro area manufacturing sector are expected to accelerate this year compared to 2017. Overall respondents report the best investment climate in 10 years. The pick-up in investment intentions is also underpinned by the continuing rise in capacity utilisation, which is now well above its long-term average and at its highest since 2008-Q2. Favourable financing conditions, diminished uncertainty, strong sentiment, and increasing corporate profitability are all set to support business investment. The improved external demand outlook should further translate into a stronger impetus for equipment investment. As in the autumn, assuming that the overall monetary stance remains accommodative, market expectations of a steepening yield curve should only have a limited negative impact on investment. **Furthermore, the Investment Plan for Europe is expected to boost investment through improved access to finance.**

The strengthening external environment creates scope for European exports to perform even better than expected at the end of 2017. This is consistent with surveys showing an improvement in export order book expectations over the last few months. Despite the euro's appreciation, euro area export growth is expected to remain robust with imports following their historical elasticity to final demand. Overall**, euro area GDP is forecast to continue growing in 2018**

at broadly the same pace as in 2017 (2.3%), before moderating to 2.0% in 2019. The expected gradual withdrawal of policy stimulus, the uncertainty around the Brexit transition agreement and the emergence of supply-side constraints are set to weigh on economic activity. The expected slowing of economic growth in 2019 is also consistent with a gradual convergence of actual growth towards potential growth in the medium term.

1.1.4 Labour Market Conditions Continue to Show Strong Dynamics

In the first three quarters of 2017, the euro area's labour market improved further amid a solid economic expansion. Employment rose by 0.4% quarter-on-quarter in 2017-Q3, resulting in an annual increase of 1.6%.

The number of employed persons currently stands at the highest level ever recorded. Yet the number of total hours worked in the economy remains below its pre-crisis level (by 3%) despite continuing to rise in line with job creation. This reflects the change in the composition of employment towards a higher share of part-time employment but also suggests that labour resources remain underutilised. Involuntary part-time work - though diminishing - remains high. **In November 2017, the unemployment rate in the euro area stood at 8.7%, its lowest level since January 2009.** The fall in unemployment has continued to be stronger than suggested by the pace of economic expansion. Labour market conditions have improved across all Member States. Though significant differences remain, such improvements are reflected in a lower dispersion of unemployment rates.

Although it continues to fall, long-term unemployment remains above its pre-crisis level. Survey indicators of firm's employment expectations are consistent with continued job creation in the fourth quarter of last year and in the period ahead, with the unemployment rate set to continue falling. In January, hiring intentions in the manufacturing sector stood close to a 30-year high and are at their highest since early 2001 in the services sector. At the same time, **there are growing signs of labour shortages in some Member States and sectors, implying that employment growth is set to moderate over the forecast horizon**. **Both in the industry and services sectors, the percentage of firms mentioning labour as a factor limiting production has been increasing, particularly over the past two years.**

1.1.5 The Outlook for Inflation Remains Subdued

Despite the impact of higher energy prices, euro area inflation remained subdued in the fourth quarter of 2017, with headline inflation softening to 1.4% in December from 1.5% in November. **Average inflation in the fourth quarter stood at 1.4%**. This could be attributed to special factors within services inflation related to transport, packaged holidays and accommodation components which declined strongly. At the same time, non-energy industrial goods inflation remained broadly flat, whereas food price inflation increased notably in the last quarter of the year. The impact of energy inflation was positive given the increase in oil prices, although this was partly offset by base effects. Mostly as a result of slowing services inflation, core inflation – which excludes volatile energy and unprocessed food prices – remained subdued at 1.1% throughout the fourth quarter, down from 1.3% in the preceding quarter. That core inflation remains subdued mostly reflects the lagged negative impact of a prolonged period of low inflation dragged by the past collapse in oil prices, and weak wage dynamics related to, among other things, labour market slack.

Indeed, considering the sustained improvement in the labour market, wage growth has remained unusually contained. The annual growth of both nominal compensation per employee and negotiated wages stood stable in 2017-Q3 compared to the preceding quarter (at +1.7% and +1.5%, respectively), whereas hourly labour cost growth slipped to +1.6% (+1.8% in 2017-Q2). Overall, annual unit labour cost growth remained muted in the third quarter of the year, reflecting a cyclical improvement in productivity and moderate growth in compensation per employee.

All these factors are set to change course as the synchronised upswings in economic activity and oil prices are expected to exert a positive impact in both 2018 and 2019. Their effect, however, is expected to be muted somewhat by the euro's higher effective exchange rate.

Brief overview of the most relevant markets in a timber product perspective.

1.2 Japan[1]

Growth is estimated to have picked up to about 1.8% in 2017, aided by stronger international trade and fiscal stimulus. Although fiscal consolidation is set to resume in 2018, growth is projected to remain close to 1.2-1.4% in 2018 and 1-0.9% 2019, as export growth remains robust. Employment is projected to peak in 2018 as the decline in the working-age population accelerates. Sustained above-potential growth will boost inflation to 1% in 2018 and around 1½ per cent in 2019 (excluding the impact of the increase in the consumption tax rate).

The Bank of Japan should maintain its expansionary monetary policy until the 2% inflation target is achieved. Structural reforms, including measures to improve corporate governance, facilitate the exit of non-viable firms and raise productivity in small firms, are key. Increasing female employment by expanding childcare and improving work-life balance is also essential to boost growth and help put the government debt ratio on a downward trend. In contrast to household and corporate debt, government debt, which has surpassed 220% of GDP, the highest ever recorded in the OECD area, poses a serious risk.

The debt burden is limited at present by negative interest rates on government bonds of less than ten years maturity, as a result of purchases by the Bank of Japan, which now owns 41% of the outstanding stock of government bonds. Achieving fiscal sustainability requires measures to durably strengthen economic growth and a more detailed consolidation path, including gradual hikes in the consumption tax rate and measures to control social spending in the face of rapid population ageing.

As hinted above, growth is expected to slow as fiscal consolidation resumes in 2018. The primary deficit is projected to fall to around 3¼ per cent of GDP in 2019. Wages are projected to continue rising gradually in the face of further labour market tightening, thus sustaining private consumption, although its path in 2019 will be volatile due to the consumption tax hike. Strong demand from other Asian countries is expected to support export growth.

1.3 China[2]

Growth has strengthened somewhat in 2017, driven by services and some strategic industries, but is projected to soften in 2018-19, as exports decelerate. Industrial production growth has been picking up and profits have improved on the back of higher producer prices. The share of processing trade is declining but demand for services, in particular on account of tourism and foreign intellectual property, will remain high. Exports will slow somewhat but remain robust, making for a stable current account surplus. Infrastructure investment will also remain strong, notably to meet the targets of regional development initiatives. Housing investment will slow somewhat following a series of measures to restrict demand.

The monetary policy stance will continue to be neutral with a tightening bias even though selective easing will be implemented to improve access by small businesses and agriculture to credit. Attention is increasingly shifting towards enhancing financial stability as capital outflows moderate and the exchange rate is stabilised. Fiscal policy will remain supportive with the launch of multiple large-scale infrastructure projects, but public spending on education, health and social policies deserves greater emphasis.

Shadow banking is being reined in, but bank lending continues to grow unabated, increasing the probability of future bad loans. Corporate debt has stabilised relative to GDP at a high level, but household debt is rising, though from a very low base. House price increases have moderated, but prices remain high in several large cities. Banking sector

1 The information in this chapter has been taken from the OECD Economic Forecast for Japan
2 The information in this chapter has been taken from the OECD Economic Forecast for China

stability is being strengthened by new prudential measures discouraging interbank lending. The cut in compulsory reserve ratios for banks that lend for inclusive purposes, such as agriculture and small businesses, is expected to boost those banks' profits.

As hinted above, GDP growth is projected to edge down over the next two years as exports and investment moderate, but will remain strong. The Belt and Road Initiative will continue to boost trade and investment ties with participating countries. Restrictions on house purchases and sales as well as on mortgage lending have started to impact the housing market, but prices will remain elevated as long as supply is constrained. This is reflected in the steady rise of land area auctioned notwithstanding moderating house prices and sales. Still robust housing price increases will keep residential investment relatively strong, absent alternative investment opportunities with comparable returns. Employment creation, aided by exemptions from user charges and taxes as well as by subsidised loans for entrepreneurs, will support consumption growth. However, without structural reforms to reduce precautionary saving, such as the provision of a better social safety net and higher-quality public services, rebalancing will advance only slowly.

1.4 Russia[3]

Economic growth is projected to continue its moderate pace. Assumed stable oil prices, better business sentiment and improved credit conditions will support investment and consumption. Unemployment will remain low, but inflation will decline further on the back of sluggish demand and low import prices. However, low productivity, a shrinking workforce, a relatively strong rouble and international sanctions weigh on the outlook. Income inequality and poverty remain high.

The central bank has space for further easing. The new fiscal rule will reduce budgetary volatility stemming from oil price fluctuations. The announced fiscal tightening is projected to be gradual. This should limit the impact on growth and inequality, but there is scope for more spending, especially to raise growth and well-being. A higher VAT rate and lower labour taxes would reduce informality and improve productivity. Energy sector tax reform would help increase revenue, and fund infrastructure investment.

Household borrowing has picked up in line with the economic recovery, while corporate borrowing is sluggish. Better domestic and external conditions have decreased both rouble and foreign-denominated overdue loans. The high loan-to-income ratio among households with low incomes could pose a vulnerability. The central bank should actively use macro-prudential tools. The central bank's takeover of two major private banks in mid-2017 helped maintain stability, but increased the already large state influence in the banking sector.

As hinted above, growth is expected to be around 2% in 2018 and 1.5% in 2019. Investment will continue to recover but at a slower pace. High real interest rates will continue to boost capital inflows. Household consumption will increase, backed by real income growth and improved access to credit. Fiscal consolidation will weigh on GDP growth. The strong rouble bears on competitiveness and the growth of non-oil exports. Higher domestic demand will translate into stronger import growth. Real incomes will increase and poverty will decline; however, the share of vulnerable households will remain high.

1.5 USA[4]

The economic expansion is projected to continue in 2018 and 2019. Buoyant asset prices and strong business and consumer confidence will support consumption and investment growth. The impact of slowing employment growth on consumption will be partly offset by wage growth acceleration as the labour market tightens further.

Fiscal policy is projected to become more supportive in 2018 as measures are assumed to be introduced

3 The information in this chapter has been taken from the OECD Economic Forecast for Russia

4 The information in this chapter has been taken from the OECD Economic Forecast for the United States

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lowering tax rates on corporate and personal income and stimulating investment and consumption. At a time when unemployment is at its lowest level since 2000, the assumed fiscal boost will also contribute to further wage growth, thereby providing the conditions for monetary policy to continue normalising gradually. Policies to help people return to employment would underpin stronger growth of activity while reducing inequalities. Deregulation and tax reform would support stronger investment and help lift productivity.

Financial stability has strengthened since the crisis and regulatory oversight has improved considerably, but vulnerabilities have emerged during the extended period of exceptional monetary easing. In particular, asset prices are elevated, and high leverage exposes the corporate sector to shocks. House prices exceed pre-crisis levels in several big cities. Although regulatory oversight imposes a burden on some financial firms, reforms to minimise these burdens need to ensure that vulnerabilities are not allowed to build up further.

As hinted above, GDP growth is projected to increase temporarily in 2018 due to the tax reform. Household spending remains robust although slowing labour force growth will gradually constrain consumption in 2019. Accelerating wage growth, as the labour market tightens further, is projected to support real disposable income. In addition, the fiscal measures introduced in 2018 will underpin higher wages as well. Higher wage growth will create stronger inflationary pressures which will allow monetary policy to continue reducing accommodation. The tax measures will buttress business investment. The widespread improvements in external demand strengthen export growth, even though this is largely offset by higher imports of investment goods.

1.6 Exchange Rates

The exchange rate between two currencies is an important driver of trade. Other things being equal, a strong currency in country A (relative to trade partners) will favour importers of country A, while a weak currency in country A will favour exporters of country A.

Exchange rate fluctuations thus affect trade and industries, and the European sawmill industry is no exception to this. It is therefore useful to include an overview of exchange rates in this chapter.

In the figures below, we provide the exchange rate of the EUR vs various currencies over the last two years (data updated in April 2018).

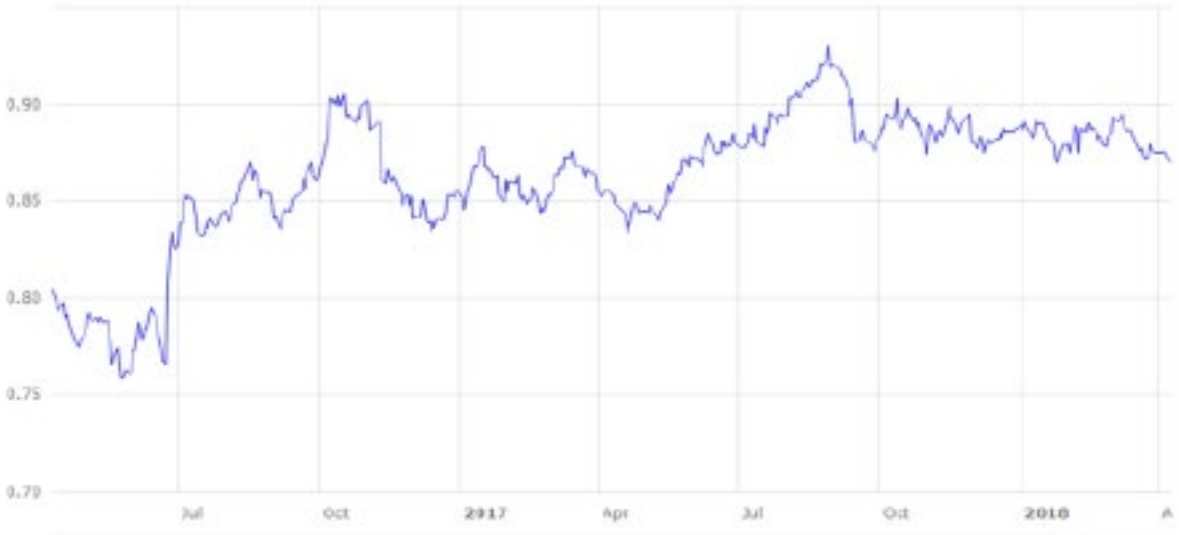
The euro vis-à-vis the US dollar has appreciated in 2017 and remained overall stable at the beginning of 2018. Over the last two years the USD was at its strongest (vs the EUR) in December 2016 when 1 euro=1.04 dollar and at its weakest in February 2018 when 1 euro=1.25 dollar.

Fig. 1.1 EUR vs USD, April 2016 – April 2018

Source: European Central Bank, 2018

Until September 2017 the euro appreciated against the pound sterling, but over the last seven months the exchange rate has been in the range of 1 euro=GBP 0.87 and 1 euro=GBD 0.90. Over the last two years the GBP was at its strongest (vs the EUR) in May 2016 when 1 euro=0.76 GBP and at its weakest in August 2017 when 1 euro=0.96 GBP. In those days the euro hit an 8-year high vs the GBP.

Fig. 1.2 EUR vs GBP, April 2016 – April 2018



Source: European Central Bank, 2018

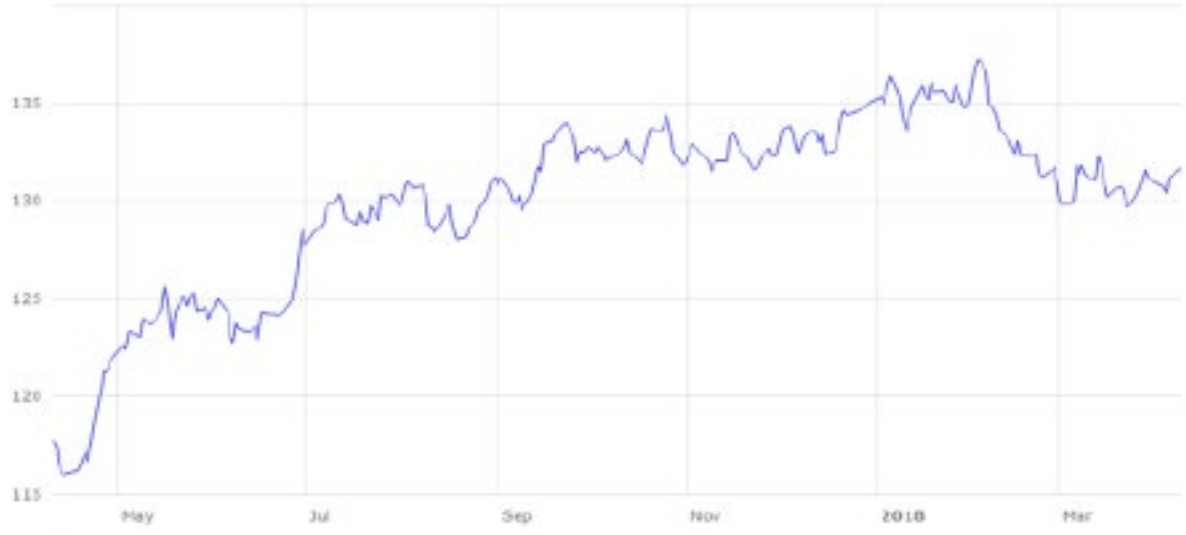
From the end of 2016 until summer 2017, the euro appreciated against the Chinese yuan, but over the last few months there has been an irregular downward trend, pointing to a slight depreciation. Over the last two years the CNY was at its strongest (vs the EUR) in December 2016 when 1 euro=7.21 CNY and at its weakest in August 2017 when 1 euro=7.98 CNY.

Fig. 1.3 EUR vs CNY, April 2016 – April 2018

Source: European Central Bank, 2018

From the end of 2016 until February 2018, the euro appreciated against the Japanese yen, but over the last two months, there was a depreciation. Over the last two years the JPY was at its strongest (vs the EUR) in April 2016 when 1 euro=116 JPY and at its weakest in February 2018 when 1 euro=137 JPY.

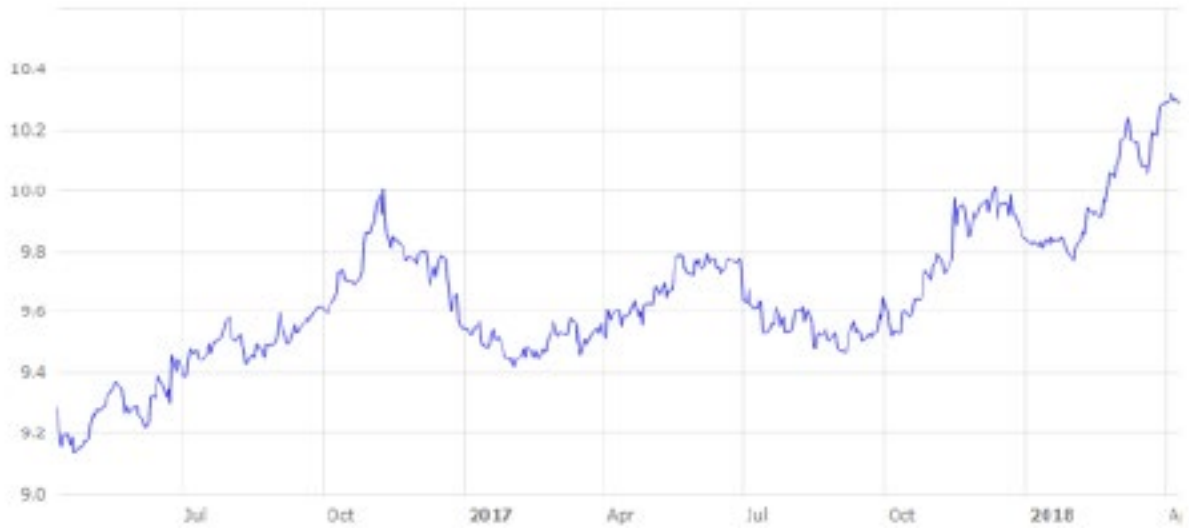
Fig. 1.4 EUR vs JPY, April 2016 – April 2018



Source: European Central Bank, 2018

The euro has been appreciating against the Swedish krona since summer 2017. In April 2018 the euro was at its strongest level vs the krona since 2010 (1 euro=10.3 SEK).

Fig. 1.5 EUR vs SEK, April 2016 – April 2018



Source: European Central Bank, 2018

As a result of geopolitical tensions, over the last few years the rouble has been very volatile. The euro has been appreciating against the Russian rouble since summer 2017, after a period of depreciation which followed a massive appreciation between 2014 and beginning of 2016. In April 2018 as a result of fresh sanctions, the rouble sharply weakened.

Fig. 1.6 EUR vs RUB, April 2016 – April 2018

Source: European Central Bank, 2018

When the Egyptian authorities stopped controlling the value of the Egyptian pound in November 2016, the pound lost 50% of its value vs the euro. The euro has kept appreciating ever since, though in 2018 the exchange rate seems to have stabilized at slightly less than 1 euro=22 EGP.

Fig. 1.7 EUR vs EGP, April 2016 – April 2018

Source: www.xe.com

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Special Focus on China and South East Asia

China's import of softwood lumber reaching new record level

China – Softwood lumber

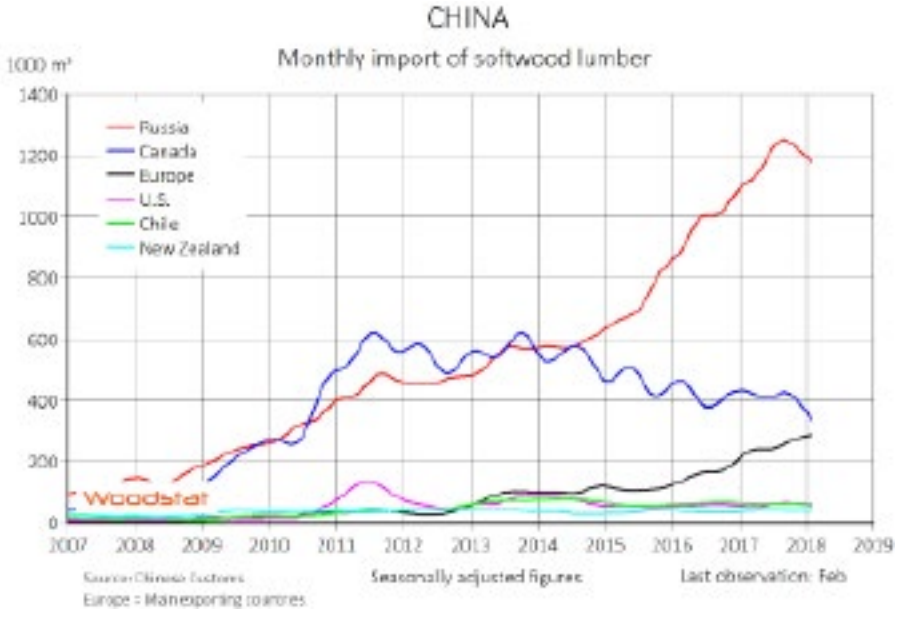
In several countries import of softwood lumber is significantly below the pre-financial crisis level. Import in EU 2017 was nearly 10 million m³ lower which means 20% below the level 10 years ago and in the U.S. the level was 7 million m³ or 16% lower. China as a softwood lumber importer certainly has saved the lumber market. Softwood lumber import in China in 2017 amounted to 25 million m³ which means an increase of more than 800% or 22 million m³ compared to 2007. During January-February 2018 the import is running at the same level as a year ago and the seasonally adjusted trend lines for import from Russia and Canada have entered a slower phase. Import from Europe is increasing rapidly (figure 1). A growing population and massive migration are the main factors for healthy softwood lumber consumption and will support a higher demand for lumber. The furniture industry is also an important consumer of softwood lumber with a positive forecast. We can also add a growing interest in using lumber as a nature friendly material.

Table 1: China's import of softwood lumber (1 000 m³)

	2017	2016	2017/2016
Russia	14 124	11 678	+21%
Canada	4 972	5 059	-2%
Europe (excl. Russia)	3 088	1 882	+64%
Chile	715	772	-7%
U.S.	697	696	-
New Zealand	441	380	+16%
Other	959	631	+52%
Total	**24 996**	**21 098**	**+18%**

Source: Chinese Customs

Figure 1:



Russia is the main supplier and delivered 14.1 million m³ in 2017 (+21% compared to 2016). This means a market share of 57%. Second largest supplier was Canada with a total export of 5.0 million m³ (-2%). However, the rapid increase from continental Europe (+64%) is worth noting (table 1).

As can be seen in figure 1 Russia totally dominates as a supplier with a monthly export of about 1.2 million m³. Six years ago, Canada was the main supplier. At that time U.S. lumber consumption was very low due to the housing market crash which lowered the import of lumber. The seasonally adjusted trend line for import from Canada is decreasing. A big issue is of course the wide-ranging lumber trade dispute against the United States. In the beginning of this year Canada took the case to WTO (World Trade Organization) and it remains to be seen how and when this dispute will reach a solution.

The trend line for continental Europe has increased continuously since the beginning of 2016. Import from continental Europe is rapidly approaching the monthly figure for Canada.

Finnish export to China increased by 84% to 1.7 million m? in 2017 (compared to 2016) and China became the largest market for Finnish lumber. Shipments from Sweden and Germany increased by 31% and 15% respectively. However, other European exporters – Ukraine, Latvia and Austria increased the export at a very high rate.

Table 2: China's import of softwood lumber from main European exporters (1 000 m³)

	2017	2016	2017/2016
Finland	1 683	913	+84%
Sweden	896	684	+31%
Germany	205	178	+15%
Ukraine	123	32	+284%
Latvia	94	42	+124%
Austria	87	33	+164%
Total	**3 088**	**1 882**	**+64%**

Source: Chinese Customs

The rapidly increasing import in China is of course closely linked to the construction sector where residential buildings is the main sector, but it is also connected to a strong demand for furniture and other further processed goods. Also, in 2017 the amount of sold housing surpassed the amount of started housing (figure 3). Hence the stock of unsold housing decreased further which is important to stabilize the building industry in the long term. Housing prices in major cities have been quite stable in 2017, but we see signs of falling prices. China's President Xi Jinping recently said that "housing is for living and not for speculation". Credit is now tighter

Figure 2:

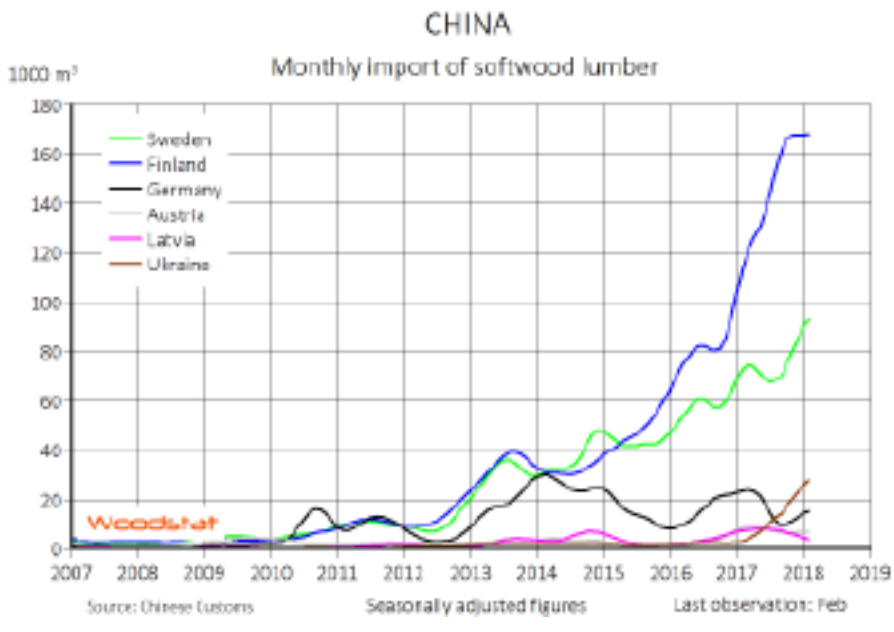
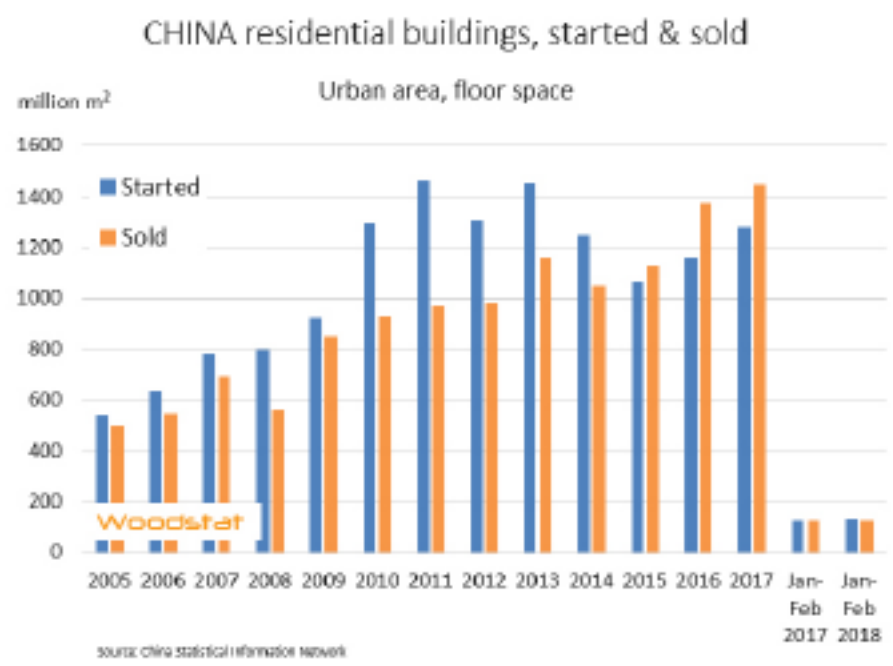


Figure 3:

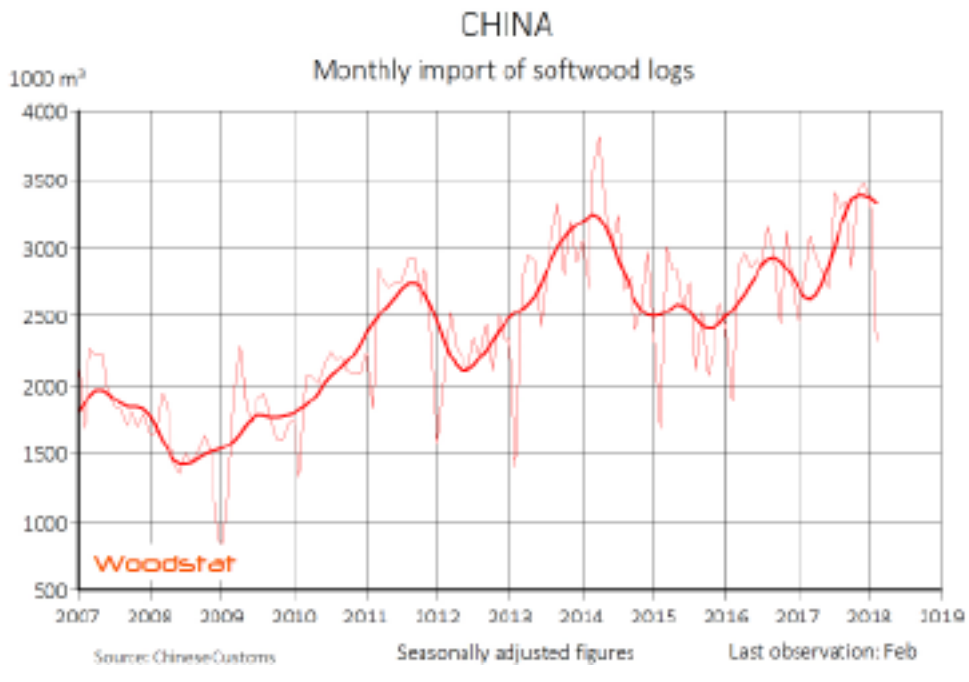


and increased down-payment is required and to that we can add restrictions on home purchases, so it remains to be seen which influence it will have on the market.

China – Softwood logs

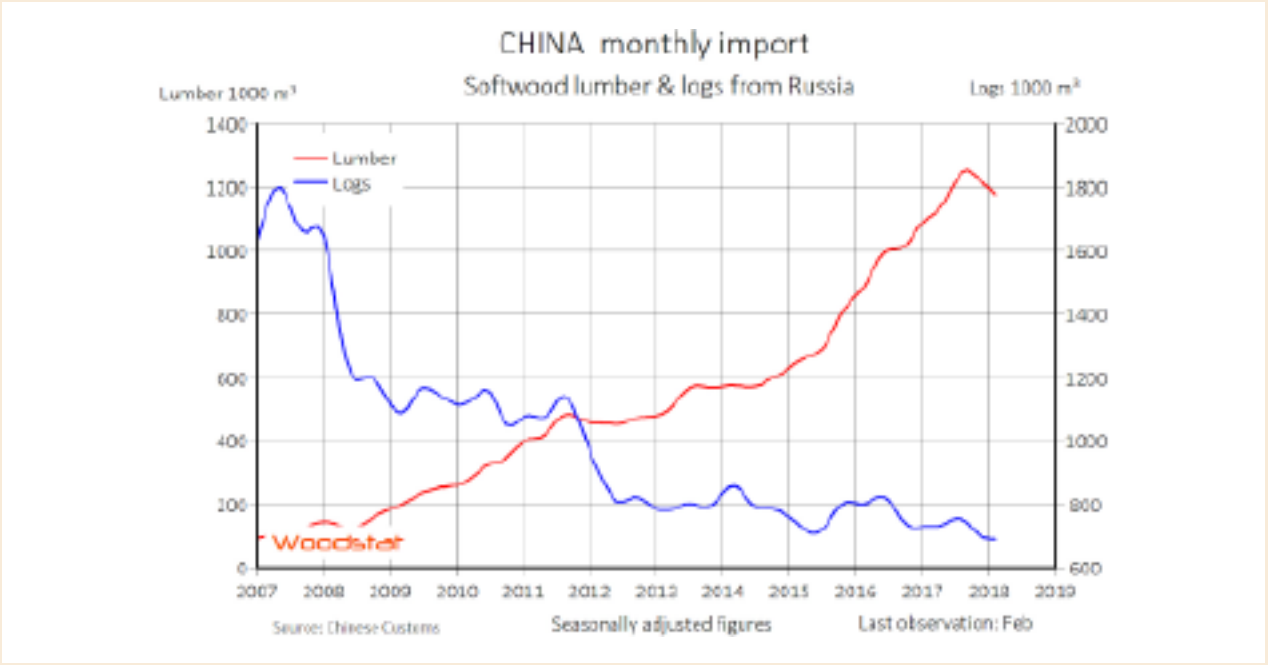
Total import of softwood logs in China has increased during the past ten years, but at a much slower rate than lumber (figure 4).

Figure 4:



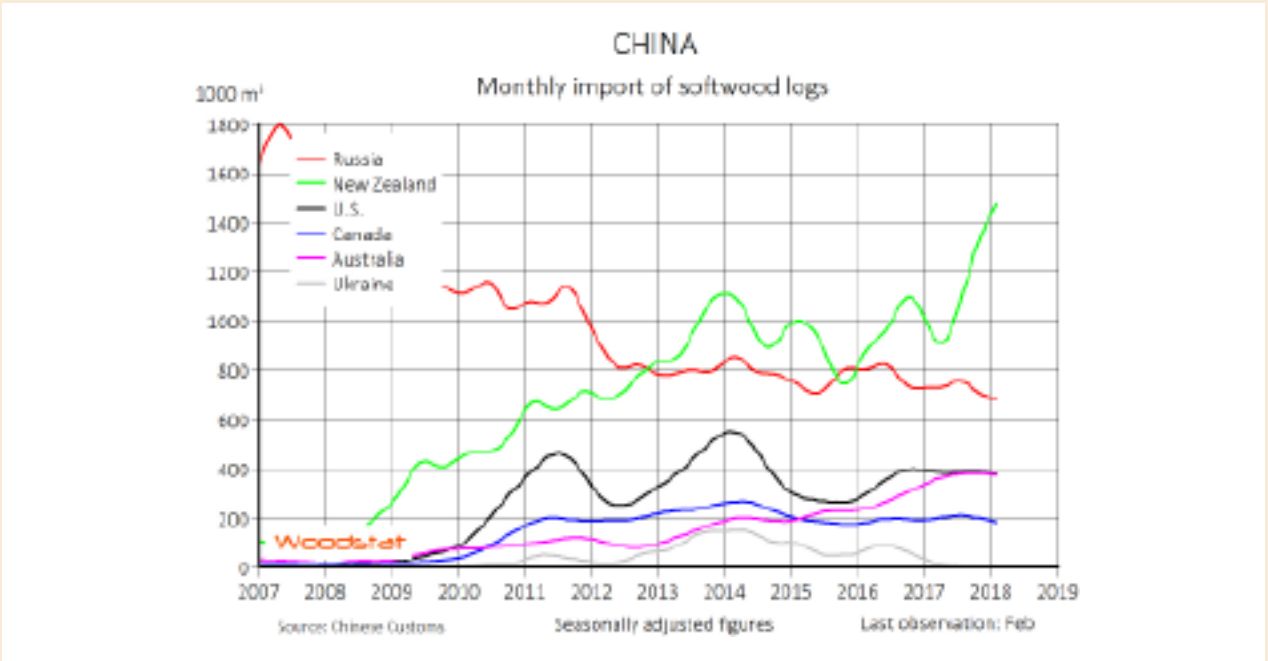
Softwood log import from Russia has changed dramatically during the last few years with a complete switch from logs to lumber which is produced at several newly built sawmills (figure 5).

Figure 5:



With a much lower import of logs from Russia, import from New Zealand is increasing rapidly to a new record level. Log prices in New Zealand have increased significantly and reached new record levels. Local sawmills in New Zealand are now reporting shortage of sawlogs. It's also a steady increase from Australia while import from U.S. and Canada are quite stable. With growing demand of softwood lumber in the U.S. and lumber prices at record-high leve, it's likely that import from North America will enter a falling trend (figure 6).

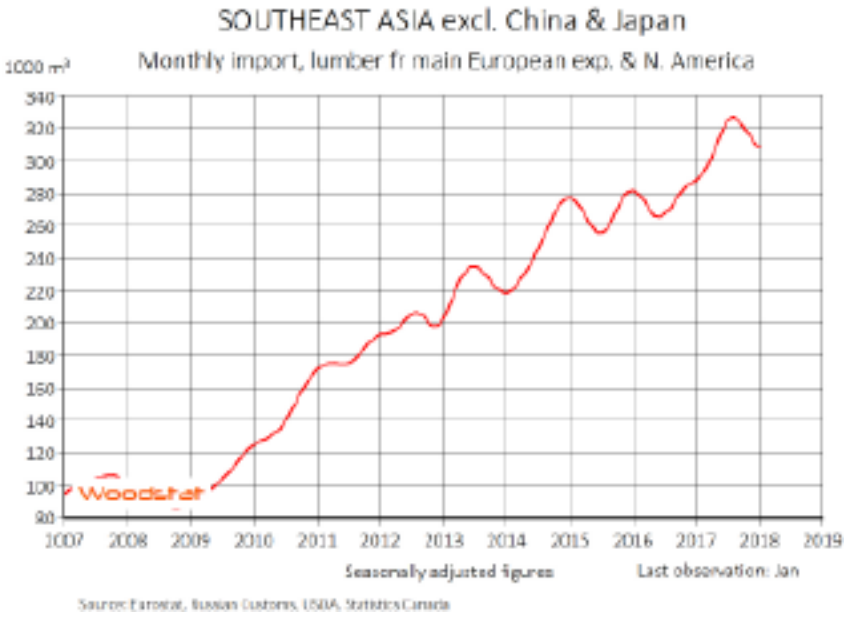
Figure 6:



Southeast Asia (excl. China and Japan) – Softwood lumber

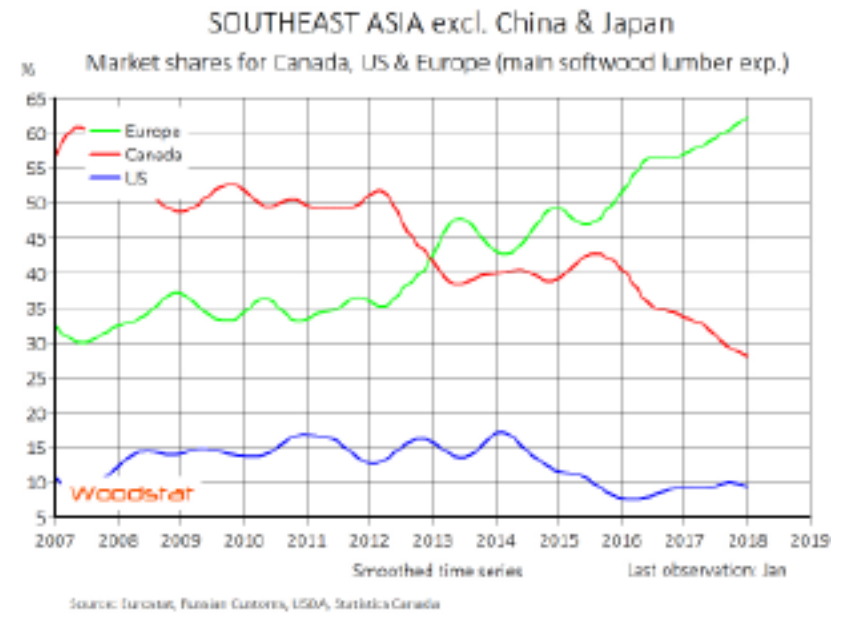
In Southeast Asia; China and Japan are the main importers, but many other countries in the region are increasing their import of softwood lumber rapidly. Import from Europe and North America were in 2017 and beginning of 2018 running at a monthly average level of over 300,000 m³, compared to 100,000 m³ in 2007 (figure 7). Import increased by 13% in 2017 to 3.7 million m³ (compared to 2016).

Figure 7:



As can be seen in figure 8 European exporters also gain market shares in this region. The market share for Europe has increased from 30% to 60% and the opposite is true for Canada.

Figure 8:

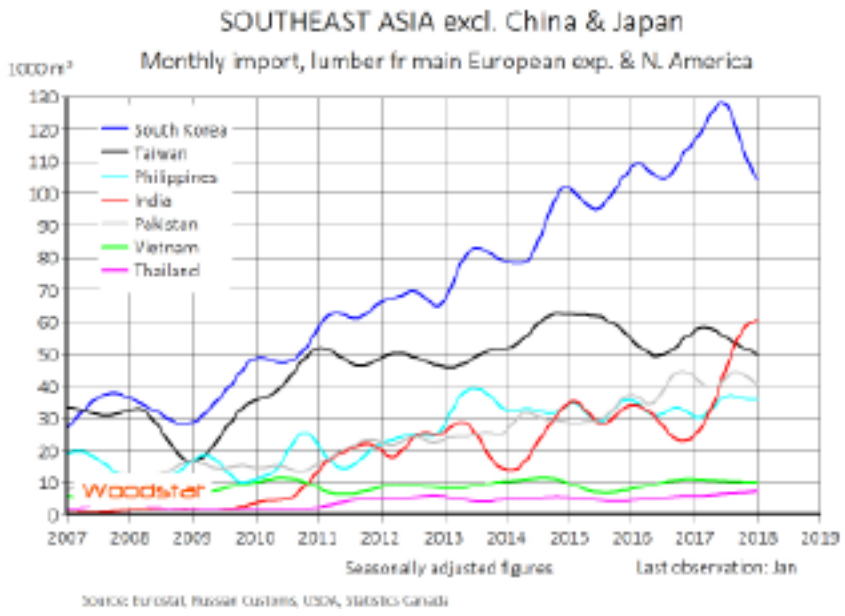


Strong growing economies and increasing construction support a steady increase in import, but significant volumes are also imported to make furniture, plywood etc. Like in many other countries there is also a growing interest in lumber as eco-friendly material. In the beginning of 2018 an official report has been published in South Korea saying that wood construction should be recommended to ensure safety of people living in earthquake areas. Total number of housing building permits in South Korea is running at a high level and will support softwood lumber consumption the next coming years.

In India the lumber market has been totally dominated by hardwood, but a growing shortage of hardwood is also supporting demand of softwood lumber. As regards construction in India the forecast is very bright, and the government will support housing and infrastructure. As in China demand for housing is also supported by a rapid urbanization.

South Korea is the main importer when we analyze the import from Europe and North America followed by Taiwan and India (figure 9).

Figure 9:



It's worth mentioning that all countries in the area increased the import of softwood lumber from Europe and North America in 2017 (compared to 2016). Import in India increased by 44% and had the largest increase in 2017 (table 3). It is also worth noting that Pakistan's import in 2017 is running at a level ten times higher than ten years ago.

Canada is the main supplier to the region and the import increased by 2% in 2017 (compared to 2016) while the import from Europe (incl. Russia) increased by 17%. The import from U.S. increased by 30%. As can be seen in table 4 all leading European softwood lumber producers increased the export to the area. Germany is the second

Table 3: The Southeast Asian (China and Japan excluded) import of softwood lumber (1 000m³) from Europe (leading exporters) and North America

Importer	2017	2016	2017/2016
South Korea	1 409	1 287	+9%
Taiwan	685	624	+10%
India	508	352	+44%
Pakistan	506	467	+8%
Philippines	405	387	+5%
Vietnam	125	118	+6%
Thailand	78	66	+18%
Total	**3 716**	**3 301**	**+13%**

Source: Eurostat, Russian Customs, USDA, Statistics Canada

largest exporter and increased the volume by 11% in 2017. Russia is no 3 as exporter and increased by 8%.

With a rather slow increase in European softwood lumber consumption and import it's of greatest importance that Asia will consume large volumes of softwood lumber. That will be supported by rapidly growing economies and heavy investments in the construction sector. To that we can add that lumber is a nature friendly material consuming carbon dioxide when growing. Carbon dioxide emissions are the most important cause of global warming.

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Table 4: Southeast Asia's (China and Japan excluded) import of softwood lumber (1 000 m^3) from Europe (leading exporters) and North America

Exporter	2017	2016	2017/2016
Canada	1 204	1 180	+2%
Germany	570	514	+11%
Russia	479	443	+8%
U.S.	358	275	+30%
Baltics	316	264	+20%
Sweden	262	219	+20%
Austria-Slovenia	238	197	+21%
Finland	213	134	+59%
Romania	76	75	+1%
Total	**3 716**	**3 301**	**+13%**

Source: Eurostat, Russian Customs, USDA, Statistics Canada

EOS expresses gratitude to Mrs Wessung for her precious contribution to the EOS Annual Report 2017/2018.

Woodstat

Woodstat helps you who work with softwood to know what happens on the market worldwide. Our aim is to help you make better decisions for your company. To do this we publish around 400 newsletters each year and offer a charts collection online with the latest statistics covering the softwood lumber market worldwide. Our aim is to provide our customers the latest statistics – detailed and relevant.

2. The woodworking industries in the European Union (EU-28)

EOS expresses gratitude to Ms Isabelle Brose, Sustainability and Economic Affairs Manager of CEI-Bois, for her kind contribution to this EOS Annual Report Chapter.

2.1 Introduction

Since 1990, NACE (Nomenclature of Economic Activities in the European Community) provides a harmonised statistical classification of economic activities in the EU. Contrary to the Combined Nomenclature (CN) and the Harmonised System (HS), providing a classification according to trade, the NACE system classifies economic activities in terms of production corresponding to the nature of goods and services produced or by the nature of the production process used. Several small modifications to the classification system were carried out since 1990. However, in 2007, the system was submitted to radical changes.

It is important to note that the NACE category for wood and products of wood and cork (NACE 16) consists of two categories: one for sawmilling and planing of wood (NACE 16.1) and one for the remaining wood products (NACE 16.2). Within this last category, the sub-category "Manufacture of veneer sheets and wood-based panels" (NACE 16.21) consists of:

- veneer sheets thin enough to be used for veneering, making plywood or other purposes: smoothed, dyed, coated, impregnated, reinforced (with paper or fabric backing) or made in the form of motifs;
- plywood, veneer panels and similar laminated wood boards and sheets;
- OSB and other particleboard;
- MDF and other fibreboard;
- densified wood;
- glue laminated wood, laminated veneer wood.

Table 2.1: The NACE classification system

NACE Code (new)			Definition
16			Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
	16.1		Sawmilling and planing of wood
	16.2		Manufacture of products of wood, cork, straw and plaiting materials
		16.21	Manufacture of veneer sheets and wood-based panels
		16.22	Manufacture of assembled parquet floors
		16.23	Manufacture of other builders' carpentry and joinery
		16.24	Manufacture of wooden containers
		16.29	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials
31			Manufacture of furniture
	31.01		Manufacture of shop- and office furniture
	31.02		Manufacture of kitchen furniture
	31.03		Manufacture of mattresses
	31.09		Manufacture of other furniture

Source: Eurostat

Unfortunately, Eurostat is not able to provide up-to-date information on the activities within the woodworking and the furniture industries in many countries on 3-digit level.

When analysing the figures, it should keept in mind that most national statistical systems tend to underestimate the figures for small and medium-sized industrial sectors. This is clearly the case for the woodworking industries. The underestimation is particularly important for the employment figures, since the official statistics often only cover enterprises with at least 20 persons employed whereas the woodworking industries is a typical SME sector.

A last comment relates to the production data of the furniture industry as declared by Eurostat and the data published in chapter 4.2 as reported by CSIL. Since CSIL only takes into account the furniture industry *stricto-sensu*, several products like mattresses, seats for automobiles and aircrafts are not included in its overview, which results in a much lower figure. In addition, the CSIL production data are not only based on official statistics, but also on several other sources such as international trade associations and internal databases.

2.2 Production

The total production value of the woodworking industries in the European Union (EU) peaked in 2007 at 237 billion EUR before falling under 190 billion EUR in 2008 and 2009 as a result of the global economic crisis. The production value upturned in 2010 and grew further in 2011 but dropped again in 2012 and 2013 when it reached again a level below the 200 billion EUR threshold. In 2014, the production value upturned once again and continued to grow. In 2016, it increased by 0.7% and amounted to more than 221 billion EUR.

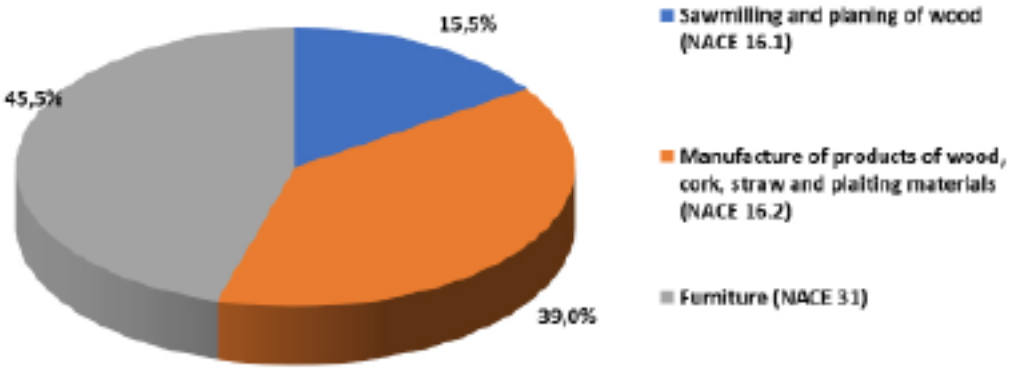
Table 2.2: Production in the woodworking industry in million EUR, 2012-2016 (NACE 16 & 31)

Production (excl VAT)	2012	2013	2014	2015	2016	16/12	16/15
16.1	33.230	32.991	35.333	35.495	34.371	*3,4%*	*-3,2%*
16.2	80.820	79.212	83.137	86.685	86.137	*6,6%*	*-0,6%*
Subtotal 16	114.050	112.203	118.470	122.180	120.508	*5,7%*	*-1,4%*
31	89.355	87.733	92.118	97.317	100.580	*12,6%*	*3,4%*
Total 16 + 31	**203.405**	**199.935**	**210.589**	**219.497**	**221.088**	***8,7%***	***0,7%***

Source: Eurostat

In 2016, the production value of sawmill products (NACE 16.1) decreased by 3.2%. The value of other woodworking products (NACE 16.2) also decreased but to a lesser extent by 0.6%. Consequently, the woodworking industries *stricto sensu* (NACE 16) declined by 1.4%. On the contrary, the production value in the furniture sector (NACE 31) increased by 3.4%.

Figure 2.1: Production 2016 – Relative importance of the sub-sectors

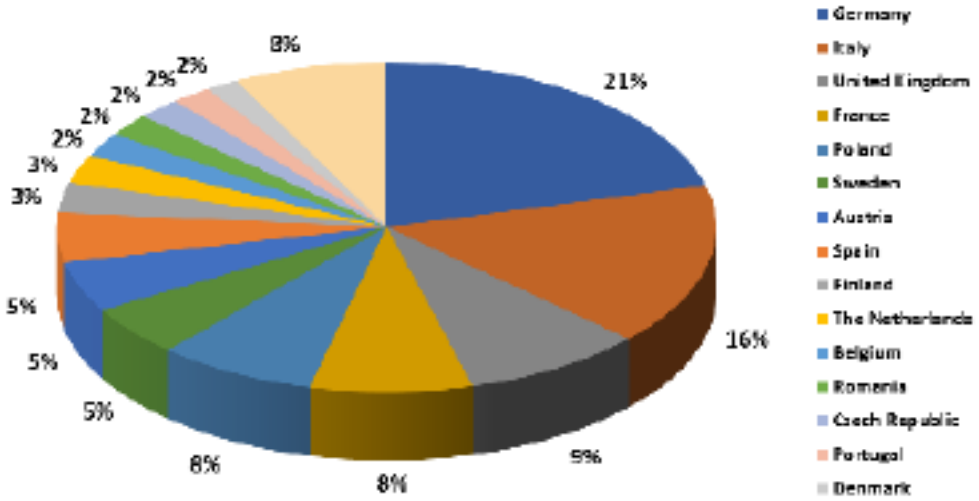


Source: Eurostat

Thanks to its new increase of activity in 2016, the share of the furniture sector (NACE 31) rose to 45.5% while other woodworking industries (NACE 16.2) represented 39% of the production and the sawmilling and planing of wood (NACE 16.1) 15.5%.

Production per Country

Figure 2.2: Production 2016 – Relative importance of the EU Member States (NACE 16 and 31)



Source: Eurostat

Within the overall woodworking industries, Germany consolidated further its leading position thanks to a slightly but constantly increasing production value (+1.1%) which exceeded 46 billion EUR in 2016. Italy consolidated also and even reinforced its second position, with an increase by 4.7% of its production value, while the United Kingdom, despite a decrease by 7% of its production value, kept its third position on the podium of the largest contributors to the production value of the woodworking industries in Europe. France, Poland, Sweden and Austria followed with a production value above 10 billion EUR each. In 2016, French and Swedish production dropped further by 2.7% and 4.3% respectively, while Polish and Austrian production increased by 1.1% and 3.8%.

Table 2.3: Production value per EU Member State in million EUR, 2012-2016

Production (excl VAT)	2012	2013	2014	2015	2016	16/12	16/15
Austria	10.404	10.288	10.299	10.623	11.028	*6,0%*	*3,8%*
Belgium	5.216	5.114	5.291	5.354	5.324	*2,1%*	*-0,6%*
Bulgaria	813	844	898	963	987	*21,4%*	*2,5%*
Croatia	872	933	1.011	1.087	1.200	*37,6%*	*10,4%*
Cyprus	187	134	128	128	137	*-26,8%*	*6,8%*
Czech Republic	4.468	4.276	4.293	4.538	4.734	*6,0%*	*4,3%*
Denmark	3.334	3.193	3.214	3.324	3.477	*4,3%*	*4,6%*
Estonia	1.759	1.973	2.198	2.359	2.465	*40,2%*	*4,5%*
Finland	6.552	6.502	6.392	6.258	6.463	*-1,4%*	*3,3%*
France	17.637	17.264	18.556	18.062	17.569	*-0,4%*	*-2,7%*
Germany	43.158	42.643	43.824	45.778	46.277	*7,2%*	*1,1%*
Greece	961	699	702	716	757	*-21,2%*	*5,7%*
Hungary	1.218	1.224	1.327	1.475	1.548	*27,1%*	*5,0%*
Ireland	1.275	1.310	1.464	1.503	1.490	*16,8%*	*-0,9%*
Italy	34.178	32.680	33.093	33.702	35.284	*3,2%*	*4,7%*
Latvia	1.873	2.041	2.198	2.196	2.324	*24,1%*	*5,9%*
Lithuania	1.965	2.082	2.446	2.527	2.592	*31,9%*	*2,6%*
Luxembourg	213	209	207	211	211	*-0,9%*	*-0,3%*
Malta	47	51	56	56	58	*24,2%*	*2,8%*
Poland	13.332	14.269	15.938	17.064	17.252	*29,4%*	*1,1%*
Portugal	3.778	3.791	4.081	4.381	4.382	*16,0%*	*0,0%*
Romania	4.161	4.482	4.730	4.879	4.890	*17,5%*	*0,2%*
Slovakia	1.506	1.514	1.955	2.084	1.846	*22,6%*	*-11,4%*
Slovenia	951	922	997	1.049	1.101	*15,8%*	*5,0%*
Spain	10.590	9.494	9.857	10.631	10.766	*1,7%*	*1,3%*
Sweden	11.885	11.362	11.783	11.548	11.057	*-7,0%*	*-4,3%*
The Netherlands	5.542	5.119	5.319	5.803	6.163	*11,2%*	*6,2%*
United Kingdom	15.533	15.523	18.330	21.200	19.706	*26,9%*	*-7,0%*
EU 28	**203.405**	**199.935**	**210.589**	**219.497**	**221.088**	***8,7%***	***0,7%***

Source: Eurostat

Compared to 2015, the strongest growth rates of production value have been recorded in Cyprus (+6.8%), the Netherlands (+6.2%), Latvia (+5.9%), Greece (+5.7%), Slovenia and Hungary (+5% each). It worth noting that these increases are significantly lower than the two-digit ones observed in 2015 compared to 2014. On the other hand, Slovakia (-11.4%) and the UK (-7%) showed the most important decreases in production value in the EU in 2016.

The production value of the woodworking industries *stricto sensu* for the 28 countries of the EU fell by 1.4% in 2016. Nevertheless, it still exceeded 120 billion EUR compared to a little more than 100 billion EUR in 2009, although it remains below the peak level of 2008 which exceeded 125 billion EUR. Cyprus (+8.9%), Croatia (+7.4%), The Netherlands (+6.4%), Latvia (+6.2%) and Hungary (+5.5%) experienced the highest increases in production value while Slovakia (-16.3%), the UK (-7.5%) and Sweden (-6.9%) showed the largest decreases in 2016. Germany, Italy and France, which took back its third position on the podium from the UK, make up the top three of the largest contributors to the woodworking industries *stricto sensu* production value in Europe.

Table 2.4: Production value per EU Member State in million EUR – wood industry *stricto-sensu*, 2012-2016

Production (excl VAT)	2012	2013	2014	2015	2016	16/12	16/15
Austria	7.491	7.443	7.454	7.756	8.016	*7,0%*	*3,4%*
Belgium	3.090	2.942	3.101	3.165	3.144	*1,7%*	*-0,7%*
Bulgaria	392	416	440	480	475	*21,1%*	*-1,0%*
Croatia	517	593	677	714	767	*48,4%*	*7,4%*
Cyprus	133	89	86	88	96	*-27,9%*	*8,9%*
Czech Republic	3.171	3.045	3.043	3.204	3.293	*3,8%*	*2,8%*
Denmark	1.527	1.438	1.471	1.483	1.532	*0,3%*	*3,3%*
Estonia	1.361	1.554	1.765	1.867	1.943	*42,8%*	*4,0%*
Finland	5.465	5.466	5.386	5.258	5.414	*-0,9%*	*3,0%*
France	10.993	10.579	11.462	11.059	10.879	*-1,0%*	*-1,6%*
Germany	22.641	23.406	24.158	25.116	24.220	*7,0%*	*-3,6%*
Greece	434	309	290	311	316	*-27,2%*	*1,8%*
Hungary	674	682	752	826	872	*29,3%*	*5,5%*
Ireland	773	738	852	903	890	*15,1%*	*-1,4%*
Italy	14.639	13.224	12.993	12.713	13.156	*-10,1%*	*3,5%*
Latvia	1.680	1.829	1.964	1.957	2.079	*23,7%*	*6,2%*
Lithuania	832	902	1.070	1.114	1.136	*36,5%*	*2,0%*
Luxembourg	196	192	190	195	195	*0,0%*	*0,0%*
Malta	11	10	13	8	8	*-27,9%*	*0,0%*
Poland	6.682	6.944	7.687	8.055	7.776	*16,4%*	*-3,5%*
Portugal	2.546	2.506	2.681	2.854	2.800	*9,9%*	*-1,9%*
Romania	2.646	2.851	2.945	2.980	2.857	*8,0%*	*-4,1%*
Slovakia	813	804	1.150	1.218	1.019	*25,4%*	*-16,3%*
Slovenia	607	610	646	693	717	*18,1%*	*3,4%*
Spain	5.483	4.999	5.288	5.887	5.888	*7,4%*	*0,0%*
Sweden	8.999	8.584	9.164	8.931	8.316	*-7,6%*	*-6,9%*
The Netherlands	2.418	2.208	2.341	2.587	2.751	*13,8%*	*6,4%*
United Kingdom	7.836	7.842	9.405	10.760	9.956	*27,1%*	*-7,5%*
EU 28	**114.050**	**112.203**	**118.470**	**122.180**	**120.508**	***5,7%***	***-1,4%***

Source: CEI-Bois calculations & Eurostat

The European furniture industry realised a total production value over the 100 billion EUR threshold in 2016 (+3.4%). Despite this further increase in production, the level was still below the 2007 and 2008 peaks, which exceeded 110 billion EUR. The Italian production value, which increased further by 5.4%, remained slightly above the German production value which grew once again by 6.8%. Both exceeded the 22 billion EUR threshold. Luxembourg (-7.1%), the UK (-6.6%), Slovakia and France (-4.5% each) experienced the largest drops of production value in the furniture industry in 2016. On the other hand, Croatia (+16.3%), Greece (+8.7%), Czech Republic (+8.1%), Slovenia (+8.1%) and Romania (+7%) showed the most important increases.

Table 2.5: Production value per EU Member State in million EUR – furniture industry, 2012-2016

Production (excl VAT)	2012	2013	2014	2015	2016	16/12	16/15
Austria	2.913	2.845	2.845	2.867	3.012	*3,4%*	*5,1%*
Belgium	2.125	2.173	2.190	2.189	2.180	*2,6%*	*-0,4%*
Bulgaria	421	428	458	483	512	*21,6%*	*6,1%*
Croatia	355	340	334	373	433	*21,9%*	*16,3%*
Cyprus	54	45	43	40	41	*-24,2%*	*2,0%*
Czech Republic	1.297	1.232	1.250	1.334	1.442	*11,2%*	*8,1%*
Denmark	1.807	1.754	1.744	1.841	1.946	*7,7%*	*5,7%*
Estonia	398	419	434	492	523	*31,4%*	*6,2%*
Finland	1.087	1.036	1.006	1.000	1.049	*-3,4%*	*4,9%*
France	6.644	6.685	7.094	7.003	6.690	*0,7%*	*-4,5%*
Germany	20.518	19.237	19.666	20.662	22.057	*7,5%*	*6,8%*
Greece	526	390	413	406	441	*-16,2%*	*8,7%*
Hungary	544	543	575	648	677	*24,5%*	*4,4%*
Ireland	502	571	612	600	600	*19,5%*	*0,0%*
Italy	19.540	19.456	20.101	20.989	22.128	*13,2%*	*5,4%*
Latvia	192	212	233	239	246	*27,9%*	*2,8%*
Lithuania	1.133	1.181	1.377	1.413	1.456	*28,5%*	*3,1%*
Luxembourg	17	17	18	17	16	*-7,1%*	*-7,1%*
Malta	36	42	44	48	50	*40,4%*	*3,3%*
Poland	6.649	7.325	8.251	9.009	9.476	*42,5%*	*5,2%*
Portugal	1.231	1.284	1.400	1.527	1.582	*28,5%*	*3,6%*
Romania	1.516	1.631	1.785	1.900	2.033	*34,2%*	*7,0%*
Slovakia	693	711	805	866	827	*19,3%*	*-4,5%*
Slovenia	344	312	351	355	384	*11,8%*	*8,1%*
Spain	5.107	4.495	4.569	4.743	4.878	*-4,5%*	*2,8%*
Sweden	2.887	2.778	2.619	2.617	2.741	*-5,0%*	*4,7%*
The Netherlands	3.124	2.911	2.978	3.216	3.412	*9,2%*	*6,1%*
United Kingdom	7.697	7.681	8.925	10.440	9.749	*26,7%*	*-6,6%*
EU 28	**89.355**	**87.733**	**92.118**	**97.317**	**100.580**	***12,6%***	***3,4%***

Source: Eurostat

2.3 Extra-EU Imports

This chapter monitors the trade flows of the 28 Member States of the EU. Only extra-EU trade is taken into account due to a lack of reliable figures for trade between the 28 members of the EU, although these flows are most important in absolute terms.

The total EU-28 imports of woodworking products exceeded 34 billion EUR in 2016, reflecting an increase of 2.8% compared to 2015. The furniture industry experienced the largest increase of imports (+3.5%), followed by the imports of the sawmill industry (+2.2%) (NACE 16.1), while imports of other woodworking products *stricto sensu* rose by 0.2% only (NACE 16.2).

Table 2.6: Extra-EU imports in million EUR, 2012-2016

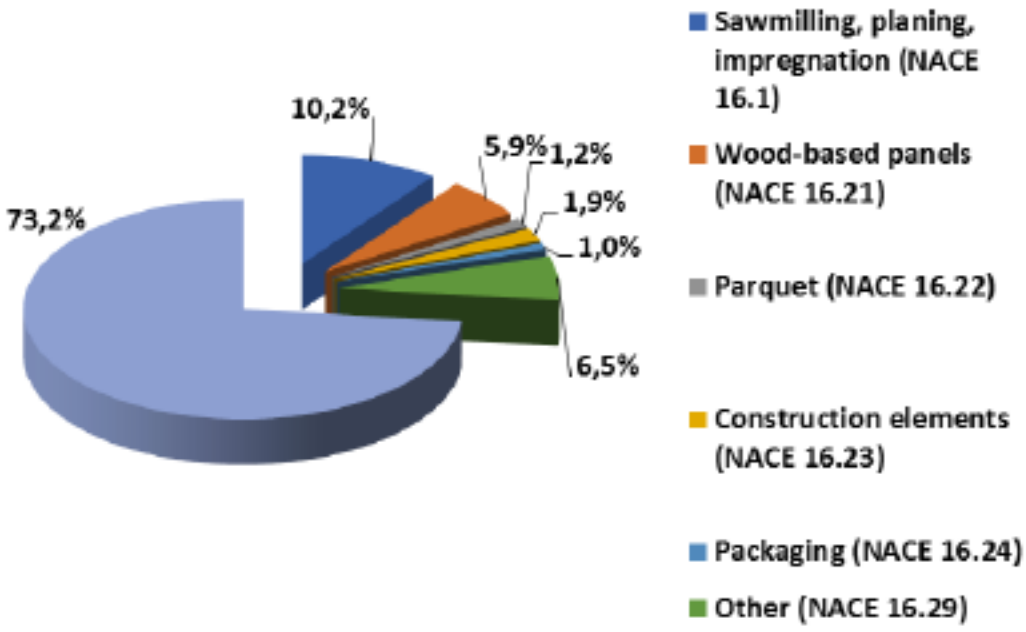
NACE code	2012	2013	2014	2015	2016	16/12	16/15
16.1	2.929	2.884	3.162	3.434	3.511	*19,9%*	*2,2%*
16.2	4.755	4.476	5.029	5.690	5.702	*19,9%*	*0,2%*
16.21	1.607	1.589	1.830	2.017	2.035	*26,6%*	*0,9%*
16.22	447	383	422	451	422	*-5,6%*	*-6,4%*
16.23	561	504	522	637	660	*17,6%*	*3,6%*
16.24	189	207	268	361	350	*85,2%*	*-3,0%*
16.29	1.951	1.793	1.987	2.224	2.235	*14,6%*	*0,5%*
Subtotal 16	7.684	7.360	8.191	9.124	9.213	*19,9%*	*1,0%*
31	19.331	18.572	20.963	24.362	25.224	*30,5%*	*3,5%*
Total 16 + 31	**27.015**	**25.932**	**29.154**	**33.486**	**34.437**	***27,5%***	***2,8%***

Source: Eurostat

While the imports of packaging (NACE 16.24) and wood flooring (NACE 16.22) decreased by 3% and 6.4% respectively, the imports of the other sub-sectors grew, especially other builders' carpentry and joinery (NACE 16.23) which increased by 3.6%.

Furniture (NACE 31) accounted for almost 73% of the extra-EU imports of woodworking products in 2016. Sawmilling products (NACE 16.1) accounted for 10% of imports and other wood products (NACE 16.2) for 17%.

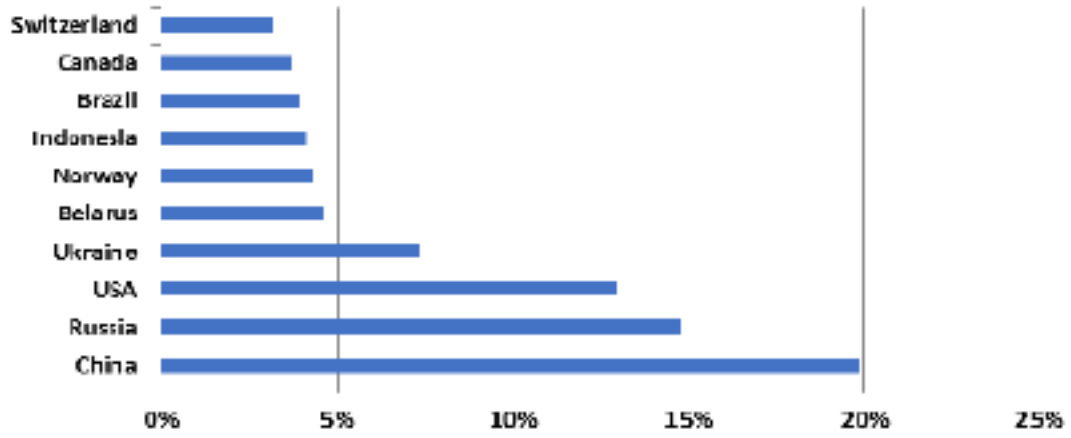
Figure 2.3: Extra-EU Imports 2016 – Relative importance of the NACE sub-sectors



Source: Eurostat

In 2016, China and Russia continued to be the largest Extra-EU suppliers of wood products to the EU, with market shares of 20% and 15% respectively. The United States were the third largest trading partner with a stable market share of 13%. Imports from American countries such as Brazil and Canada amounted together to approximately 8% of the market while 7.5% of imports came from Norway and Switzerland together. 7% came from Ukraine and 5% from Belarus. Finally, Indonesia accounted for 4% of EU imports.

Figure 2.4: Extra-EU imports 2016 - Relative importance of main countries of origin



Source: Eurostat

2.4 Extra-EU Exports

Table 2.7: Extra-EU exports in million EUR, 2012-2016

NACE code	2012	2013	2014	2015	2016	16/12	16/15
16.1	4.334	4.860	5.181	5.076	5.005	*15,5%*	*-1,4%*
16.2	5.262	5.571	5.421	5.599	5.694	*8,2%*	*1,7%*
16,21	2.658	2.755	2.624	2.641	2.670	*0,5%*	*1,1%*
16,22	418	444	448	459	498	*19,1%*	*8,5%*
16,23	1.315	1.429	1.376	1.424	1.434	*9,0%*	*0,7%*
16,24	479	530	524	553	569	*18,8%*	*2,9%*
16,29	392	413	449	522	523	*33,4%*	*0,2%*
Subtotal 16	9.596	10.431	10.602	10.675	10.699	*11,5%*	*0,2%*
31	19.009	20.399	21.104	22.325	22.172	*16,6%*	*-0,7%*
Total 16 + 31	**28.605**	**30.830**	**31.706**	**33.000**	**32.871**	***14,9%***	***-0,4%***

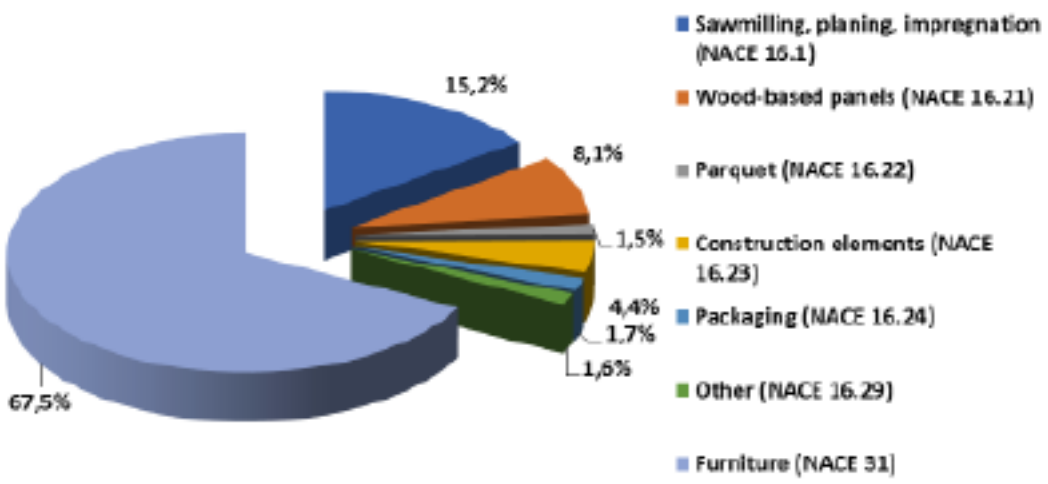
Source: Eurostat

The overall value of EU-28 exports of woodworking products amounted to almost 33 billion EUR in 2016 which was 0.4% less than in 2015. Exports of woodworking products *stricto sensu* continued to grow very slowly by 0.2% in 2016, reflecting increases of exports of all sub-sectors, and especially of wood flooring (NACE 16.22).

Furniture decreased their exports by 0.7% while the value of sawmilling, planing and impregnation (NACE 16.1) exports declined by 1.4% (though such figures may be underestimated).

Furniture (NACE 31) accounted for 67.5% of the extra-EU exports of woodworking products in 2016. Sawmilling products (NACE 16.1) accounted for a share of 15.2% of exports and other wood products (NACE 16.2) for a share of 17.3%.

Figure 2.5: Extra-EU exports 2016 - Relative importance of the NACE sub-sectors



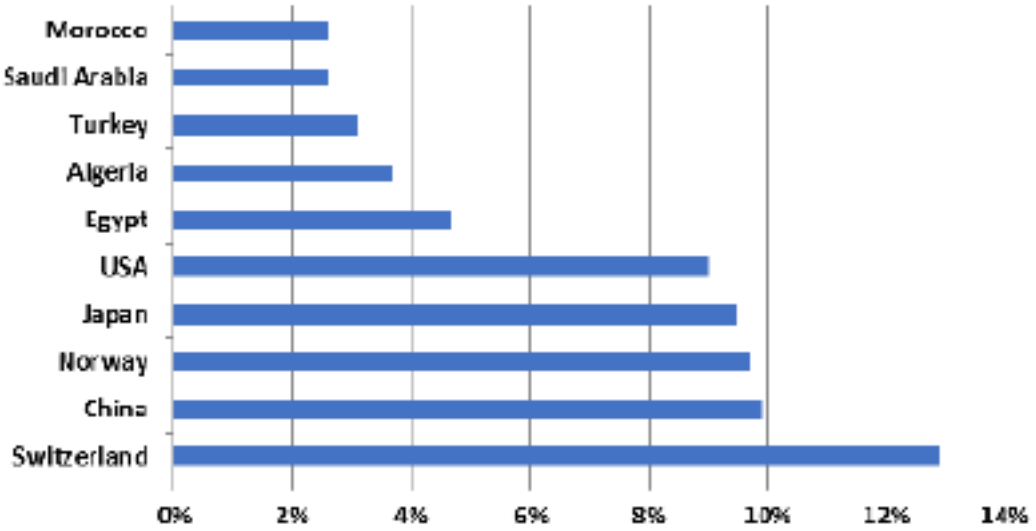
Source: Eurostat

If one does not take transit trade into consideration, the 28 Member States exports outside the EU amounted to 14.9% of their overall production in 2016. The woodworking industries *stricto sensu* exported about 8.9% while the furniture sector sold 22% of its production outside the EU.

2.5 Destination of Exports

In 2016, the EU woodworking industries exported primarily to Switzerland, China, Norway and Japan which accounted for shares of 12.9%, 9.9%, 9.7% and 9.5% of extra-EU exports respectively. USA followed with 9% of the extra-EU exports. Egypt accounted for 5% while Algeria and Turkey accounted for 4% and 3% respectively. Finally, Saudi Arabia and Morocco completed the top ten destinations of extra-EU exports, from which Russia disappeared.

Figure 2.6: Extra-EU exports 2016 - Relative importance of main destinations



Source: Eurostat

2.6 Trade Balance

The trade balance for the woodworking industries is different according to the products. In total, the EU trade balance continued to drop from -0.5 billion EUR in 2015 to -1.6 billion EUR in 2016. The woodworking industries *stricto sensu* (NACE 16) ended 2016 with a surplus of 1.5 billion EUR while the furniture industry (NACE 31) registered a negative balance of 3 billion EUR. In 2016, all sub-sectors of the woodworking industries *stricto sensu* have positive trade balances except other woodworking products (NACE 16.29) whose balance remained, as usual, negative.

Table 2.8: Trade balance in million EUR, 2012-2016

NACE code	2012	2013	2014	2015	2016
16.1	1.405	1.976	2.019	1.642	1.494
16.2	507	1.095	392	-91	-8
16,21	*1.051*	*1.166*	*794*	*624*	*635*
16,22	*-29*	*61*	*26*	*8*	*76*
16,23	*754*	*925*	*854*	*787*	*774*
16,24	*290*	*323*	*256*	*192*	*219*
16,29	*-1.559*	*-1.380*	*-1.538*	*-1.702*	*-1.712*
Subtotal 16	1.912	3.071	2.411	1.551	1.486
31	-322	1.827	141	-2.037	-3.052
Total 16 + 31	**1.590**	**4.898**	**2.552**	**-486**	**-1.566**

Source: Eurostat

2.7 Apparent Consumption

Apparent consumption of wood products grew further by 1.2% in 2016 compared to 2015 and exceeded 222 billion EUR. The consumption of products from the woodworking industries *stricto sensu* decreased by 1.3%, while the apparent consumption of furniture rose by 4.3%. The other woodworking products (NACE 16.2) fell by 0.7% in 2016 while the sawmill, planing and impregnation products (NACE 16.1) sector experienced a decrease by 2.9%.

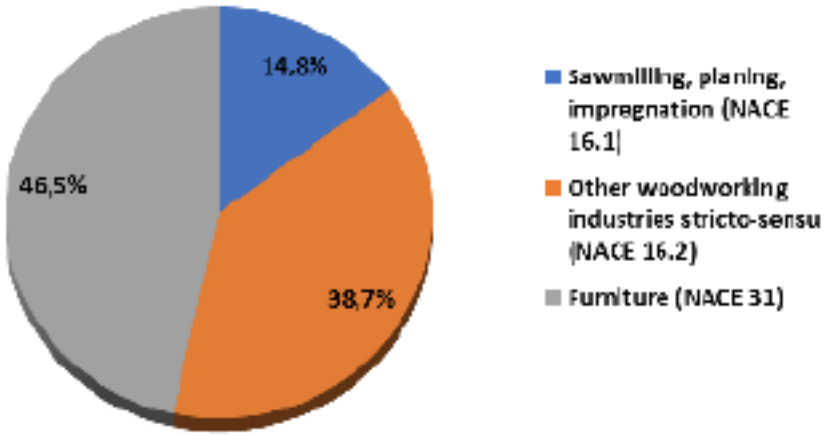
Table 2.9: Apparent consumption per sub-sector in million EUR, 2012-2016

NACE code	2012	2013	2014	2015	2016	*16/12*	*16/15*
16.1	31.825	31.015	33.314	33.853	32.877	*3,3%*	*-2,9%*
16.2	80.313	78.117	82.745	86.776	86.145	*7,3%*	*-0,7%*
Subtotal 16	112.138	109.132	116.059	120.629	119.022	*6,1%*	*-1,3%*
31	89.677	85.906	91.977	99.354	103.632	*15,6%*	*4,3%*
Total 16 + 31	**201.815**	**195.038**	**208.036**	**219.983**	**222.654**	***10,3%***	***1,2%***

Source: Eurostat

In this analysis, the consumption of sawmill products (NACE 16.1) amounted to 32.9 billion EUR and accounted for 14.8% of the total consumption of wood products in 2016. The consumption of other woodworking products (NACE 16.2) exceeded 86 billion EUR and represented 38.7% of the total consumption of wood products while the consumption of furniture (NACE 31) exceeded 103 billion EUR, meaning a relative consumption of 46.5%.

Figure 2.7: Apparent consumption 2016 - Breakdown per NACE sub-sector



Source: Eurostat

2.8 Employment

The figures on employment in the woodworking sector provide an indication of the overall employment, although it should be borne in mind that some countries do not take into account firms with less than 20 employees. Thus, the global figures tend to substantially underestimate the employment in small and medium-sized industrial sectors. Given the SME structure of the woodworking industries, the actual total number of employees in the EU-28 wood industries should be estimated at substantially more than 2 million in 2016.

Table 2.10: Employment in the EU woodworking industries, 2012-2016

NACE code	2012	2013	2014	2015	2016	16/12	16/15
16.1	253.450	244.510	249.584	246.835	244.462	*-3,5%*	*-1,0%*
16.2	746.348	721.986	741.021	725.838	743.461	*-0,4%*	*2,4%*
Subtotal 16	999.798	966.496	990.605	972.673	987.923	*-1,2%*	*1,6%*
31	998.680	971.007	964.856	979.788	1.002.937	*0,4%*	*2,4%*
Total 16 & 31	**1.998.478**	**1.937.503**	**1.955.461**	**1.952.461**	**1.990.860**	***-0,4%***	***2,0%***

Source: Eurostat

According to the Eurostat data, employment in the woodworking industries rose by 2% in 2016 but remained below the 2 million threshold. Employment increased both in the woodworking industries *stricto-sensu* (1.6%) and in the furniture sector (2.4%). Within the woodworking industries *stricto sensu*, decrease of employment was observed in the sawmill sector (-1%) while employment increased by 2.4% in the other woodworking industries.

Table 2.11: Employment in the EU woodworking and furniture industries per EU Member State, 2012-2016

number of employees	2012	2013	2014	2015	2016	16/12	16/15
Austria	63.796	62.009	60.989	60.051	60.081	-5,8%	0,0%
Belgium	25.117	24.573	25.171	24.107	23.377	-6,9%	-3,0%
Bulgaria	38.126	38.376	38.815	39.234	39.378	3,3%	0,4%
Croatia	27.051	26.635	26.848	26.479	27.733	2,5%	4,7%
Cyprus	3.668	2.942	2.714	2.603	2.726	-25,7%	4,7%
Czech Republic	87.196	81.707	80.269	80.605	80.694	-7,5%	0,1%
Denmark	21.059	20.053	20.174	20.331	20.134	-4,4%	-1,0%
Estonia	22.933	23.118	24.230	25.154	25.345	10,5%	0,8%
Finland	32.150	30.030	28.686	27.999	26.124	-18,7%	-6,7%
France	125.291	121.815	121.750	116.883	109.228	-12,8%	-6,5%
Germany	275.500	279.440	277.298	273.536	282.589	2,6%	3,3%
Greece	23.451	14.874	14.605	15.400	17.051	-27,3%	10,7%
Hungary	33.817	33.402	34.043	35.976	36.698	8,5%	2,0%
Ireland	5.453	5.898	5.900	8.614	9.014	65,3%	4,6%
Italy	276.186	263.847	263.060	249.437	242.186	-12,3%	-2,9%
Latvia	29.404	30.825	30.604	31.516	32.010	8,9%	1,6%
Lithuania	44.342	46.264	50.904	50.683	51.813	16,8%	2,2%
Luxembourg	173	169	161	161	165	-4,6%	2,5%
Malta	1.524	1.503	1.781	1.379	1.314	-13,8%	-4,7%
Poland	267.136	264.642	281.991	297.703	309.912	16,0%	4,1%
Portugal	60.958	57.000	57.671	57.916	59.919	-1,7%	3,5%
Romania	119.976	119.796	118.123	120.621	120.606	0,5%	0,0%
Slovakia	36.660	33.828	39.699	37.345	35.185	-4,0%	-5,8%
Slovenia	15.531	14.306	14.249	14.257	14.019	-9,7%	-1,7%
Spain	119.812	108.634	103.317	100.102	107.368	-10,4%	7,3%
Sweden	50.625	47.121	46.788	48.445	48.217	-4,8%	-0,5%
The Netherlands	39.256	37.327	35.810	36.621	37.976	-3,3%	3,7%
United Kingdom	152.287	147.369	149.811	149.303	169.998	11,6%	13,9%
EU 28	**1.998.478**	**1.937.503**	**1.955.461**	**1.952.461**	**1.990.860**	**-0,4%**	**2,0%**

Source: Eurostat

Among the 28 Member States, and thanks to a further increase of 4.1%, Poland consolidated its leading position in the employment ranking in the woodworking industries (NACE 16 + 31). Poland is now above the 300,000 jobs threshold. The UK (+13.9%), Greece (+10.7%) and Spain (+7.3%) showed the most significant increases while Finland (-6.7%) and France (-6.5%) experienced the largest decreases in employment in 2016.

Table 2.12: Employment in the EU woodworking and furniture industries per EU Member State, 2016

number of employees	16	16,1	16,2	31	16 + 31
Austria	32.752	10.618	22.134	27.329	60.081
Belgium	10.791	1.652	9.139	12.586	23.377
Bulgaria	16.671	6.585	10.086	22.707	39.378
Croatia	16.980	7.327	9.653	10.753	27.733
Cyprus	1.879	10	1.869	847	2.726
Czech Republic	54.801	7.974	46.827	25.893	80.694
Denmark	9.432	1.136	8.296	10.702	20.134
Estonia	17.317	5.210	12.107	8.028	25.345
Finland	19.785	7.979	11.806	6.339	26.124
France	62.165	17.811	44.354	47.063	109.228
Germany	140.679	24.832	115.847	141.910	282.589
Greece	6.650	1.106	5.544	10.401	17.051
Hungary	18.341	4.897	13.444	18.357	36.698
Ireland	4.656	1.036	3.620	4.358	9.014
Italy	107.819	14.441	93.378	134.367	242.186
Latvia	25.078	13.228	11.850	6.932	32.010
Lithuania	23.168	8.070	15.098	28.645	51.813
Luxembourg	0	0	0	165	165
Malta	0	0	0	1.314	1.314
Poland	127.821	37.526	90.295	182.091	309.912
Portugal	28.916	5.026	23.890	31.003	59.919
Romania	54.616	28.509	26.107	65.990	120.606
Slovakia	21.400	8.523	12.877	13.785	35.185
Slovenia	8.267	2.217	6.050	5.752	14.019
Spain	49.528	6.557	42.971	57.840	107.368
Sweden	32.849	11.456	21.393	15.368	48.217
The Netherlands	13.978	1.457	12.521	23.998	37.976
United Kingdom	81.584	9.279	72.305	88.414	169.998
EU 28	**987.923**	**244.462**	**743.461**	**1.002.937**	**1.990.860**

Source: Eurostat

In terms of employment, the furniture industry represented half of the jobs, the sawmill industry accounted for 12.3% of the employment while the other sub-sectors accounted for 37.3%. Again this year, in the sawmill industry (NACE 16.1) and the furniture sector (NACE 31), most people were employed in Poland. Germany continues to dominate the other sub-sectors (NACE 16.2).

2.9 Number of Enterprises

According to Eurostat, the woodworking industries counted almost 290,850 companies in 2016, meaning an increase of about 850 companies compared to 2015. Among these 290,850 companies, 120,000 were active in the furniture business (NACE 31) while the sawmill industry (NACE 16.1) and the other sub-sectors of woodworking products (NACE 16.2) accounted for roughly 33,600 and 137,200 companies respectively. These figures remain underestimations since small companies are not at times taken into account given the Member States' reporting. In

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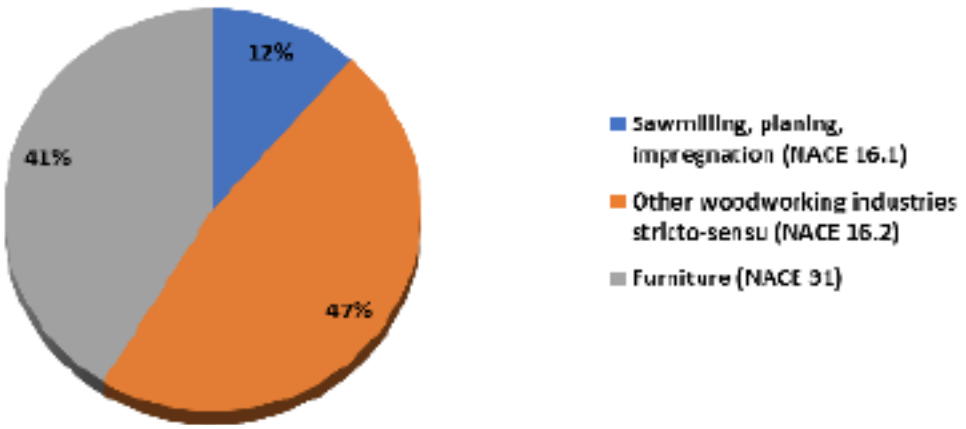
the furniture and the construction elements sectors, the number of small companies is considerable and therefore, the real number of firms could be estimated at more than 350,000 companies.

Figure 2.8: Number of enterprises 2016 - Breakdown per NACE sub-sector



Source: Eurostat

EOS expresses its gratitude to Mr Kai Merivuori, Director of Sahateollisuus Ry and EOS Board Member, for his contribution to the EOS Annual Report 2017/2018.

Special Focus on Japan

Economic Overview

According to estimations, the Japanese economy grew by 1,8% in 2017. The growth forecasts for 2018 and 2019 have been revised upwards – however, the estimates are still lower than the 2017 performance; 1,4% for 2018 and 0,9% for 2019. The upward revisions are based especially on the strong external demand, the supplementary budget and carryover of the strong activity in 2017. The Bank of Japan continues its highly accommodative monetary policy. The increasing global demand for Japanese high-tech products is reflected in the exceptionally strong purchasing manager index. Capital expenditure has also been increasing. In November, the unemployment rate hit 25-year low. Retail sales is supported by the low unemployment level, which pushes salaries higher. The labour market is expected to remain tight due to the ageing population.

On the 23rd of January 2018, 10 countries agreed to sign a new version of the Trans-Pacific Partnership Trade deal, which without the U.S. has been renamed Comprehensive and Progressive Agreement for Trans Pacific Partnership. The deal will has been signed on the 8th of March. The agreement is considered to be a win for Prime minister Abe, who has fought to save the package after President Trump withdrew from the deal in early 2017. The government is assumed to resume fiscal consolidation in 2018, which can, in principle, limit growth. However, a detailed consolidation plan is needed to achieve fiscal stability. Thus, for instance, consumption tax hikes (from 8 to 10%) can be expected in October 2018, as well as steps to control social spending. However, it can be expected that the government continues the expansionary monetary policy until inflation hits 2%.

The Japanese economy is burdened by the highest government debt within the OECD, 220% of the GDP, which creates a risk. One of the main aims of the government is to ensure confidence in Japan's fiscal sustainability. The main short-term risks are currently related to the external sector. The positive outlook can be shadowed by sudden slowdown in China, global trade barriers as well as by potential strengthening of the yen – due to increasing geopolitical risks.

The Construction Sector

The Japanese construction sector survived the financial crisis much better than for instance the U.S. Housing starts actually increased from 2008 to 2013 despite the much smaller population. However, housing starts have remained relatively stable since 2013, while the US industry has recovered strongly and now has clearly surpassed Japan.

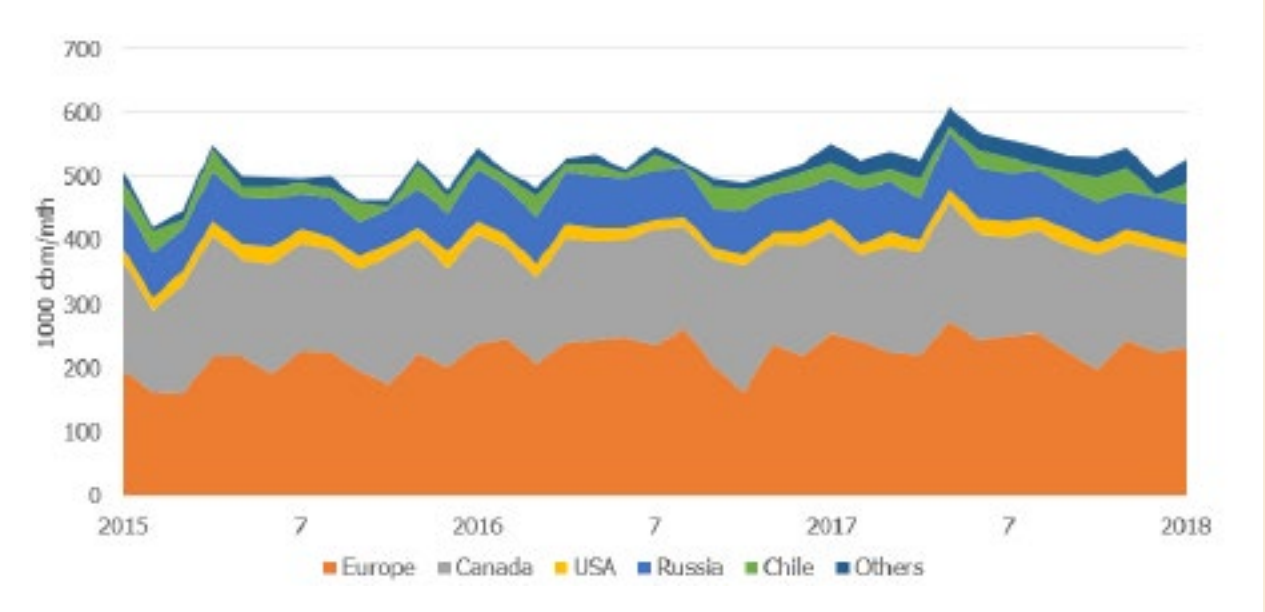
The housing starts scored 1,093 million units in 2008. 967 000 housing starts were recorded in 2017, of which 56% were wooden. The percentage of wooden constructions remained the same as in 2016. About 75% of the wooden houses are traditional and 23% 2x4 constructions. The rest are prefabricated. The residential vacancy rate has been increasing and part of the vacant houses are in bad condition. Thus, the government is considering cutting tax breaks on land which is occupied by deserted houses. The government also promotes demolishing old housing property and renovation of fixable houses. The ecological trend in the market promotes wood construction in Industrial, Commercial and especially in social housing (elderly homes etc). New requirements are being set due to changing consumer preferences, ageing population, increasing rental home demand, remodeling etc.

Consequently, the underlying drivers behind demand of wooden construction are relatively positive – which has been noted also by the government. This has resulted in promotion campaigns of domestic wood species, for instance Sugi.

Sawn softwood

Redwood exports from Sweden and Finland showed gains in 2017. According to estimates, Finnish redwood exports reached about 0,5 million m^3 (+6%) and whitewood exports 0,37 million m^3 (+2%) Finnish exports of glue laminated products also increased, thanks to growing capacity in Finland.
The figure below depicts the month-by-month exports of sawn softwood to Japan.

Fig. 1: Japan imports of sawn softwood, month by month, 000 m^3



Source: Tulli/Eurostat, re-elaborated by Sahateollisuus

A slight upward trend is noticeable over the last three years. According to the Japan Lumber Journal, Japanese imports of European softwood lumber increased by 3.3% to 2.8 million m^3 in 2017. Finland and Sweden accounted for about two thirds of total export to Japan. Imports from Finland reached 1 million m^3 (+7% compared to 2016) considering all species while imports from Sweden were around 840,000 m^3 (+8%). Conversely, trade with Central and Eastern European countries declined. Imports from Austria fell by about 10% to 300,000 m^3 and imports from Romania declined by about 13% to 205,000 m^3.

The growth of Nordic Countries' exports observed over the last three years is apparent in the figures below, where a breakdown by species is provided.

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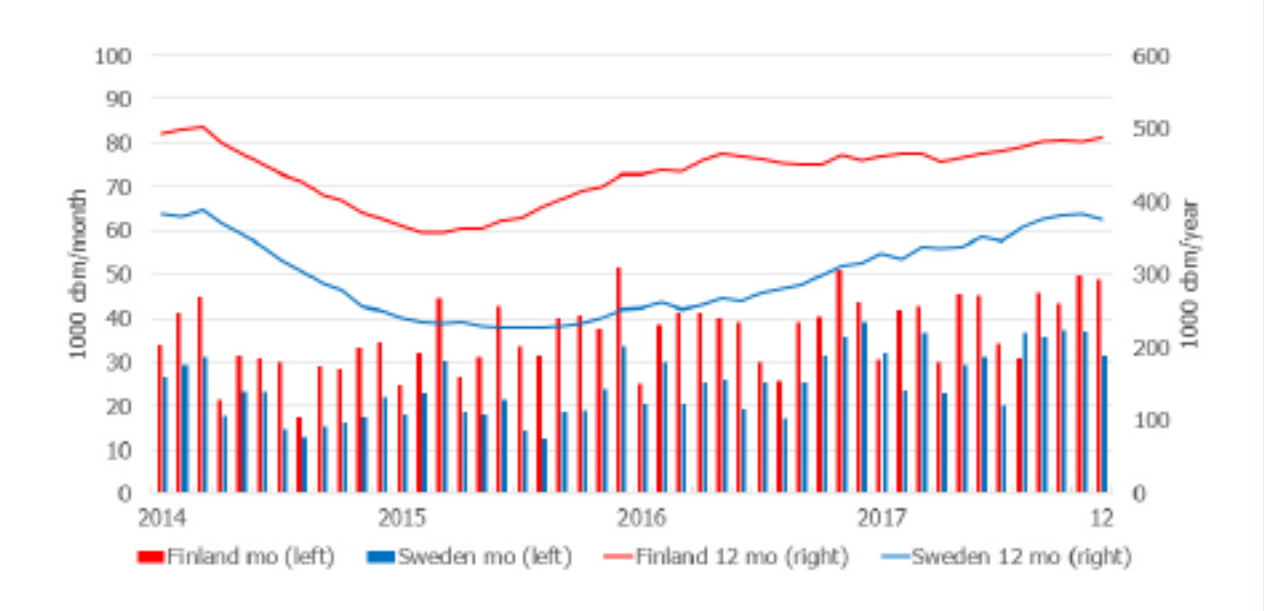
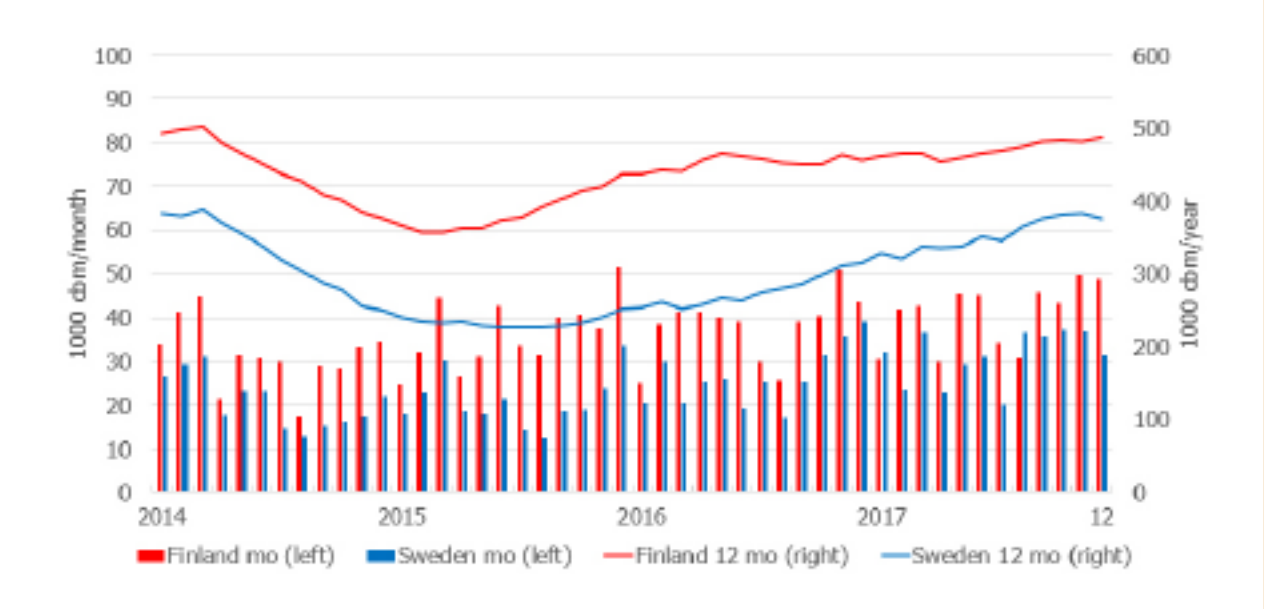
Fig 2: Exports of Sawn Softwood from Finland and Sweden to Japan of Redwood



Source: Eurostat, re-elaborated by Sahateollisuus

From the figure above, it is apparent the growth of redwood exports from both Finland and Sweden over the last year; the increase from Sweden was particularly strong.

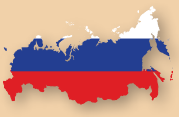
Fig 3: Exports of Sawn Softwood from Finland and Sweden to Japan of Whitewood



Source: Eurostat, re-elaborated by Sahateollisuus

Conversely, exports of whitewood from Sweden slightly declined in 2017, while exports from Finland observed a very moderate growth.

EOS expresses gratitude to Mr Sviatoslav Bychkov, Managing Director, Marketing & Communications of ILIM TIMBER for his contribution to the EOS Annual Report 2017/2018.



Special Focus on Russia

The Russian economy went out from the recession in 2017 and showed 1.5% GDP growth. The Woodworking industries contributed 1.9% to GDP achieving record high levels. The growth rate in the sawmill industry was 2.2% to 2016. Siberia accounted for 43% of the sawn timber production volume and the North West accounted to 27%.

The volumes of softwood saw log production grew by 4% and accounted for 79 mln.m^3. Exports of softwood saw log remain on the 2016 level totaled at 11 mln. m^3.

In 2017 exports of softwood lumber from Russia achieved 27.3 mln.m^3, showing 11% growth compared to 2016. Export volumes of pine sawn timber accounted for 15,3 mln.m^3, larch sawn timber – 3 mln.m^3, spruce sawn timber – 7 mln.m^3 and other species – 2 mln.m^3. Major importing countries were China, Uzbekistan and Egypt.

The main market for Russian log and lumber was China accounting for 58 % of lumber and 95% of log exports. Redistribution of lumber volumes from CIS markets continued during 2017 falling to 12% of total sawn timber exports. In 2017 export volumes to MENA region dropped to 9 % of total sawn timber exports. In the second half of 2017 Russian sawmills started to increase export volumes to Egypt from a very low level.

In 2017 China imported 15.5 mln.m^3 of sawn timber from Russia showing 21% growth compare with 2016. The Chinese share in total Russian exports of sawn timber accounted for 58%. Manzhouli - the major land port for Russian timber exports and in general China's busiest land port of entry situated in Inner Mongolia - set up a record high volume of sawn timber 8 mln.m^3 and record low volume of saw log 3.8 mln.m^3 in 2017. Imported sawn timber sales value growth rate in 2017 exceeded ~29% while saw log sales value grow up ~26%. Russian exporters started to explore railway connection to inland China Sichuan province using container trains.

Export of Siberian larch sawn timber to Europe accounted to 575 thousands m^3 in 2017 being close to the results of 2016. In the same time export of Siberian larch sawn timber to China grew by 29% achieving 1.9 mln.m^3 due to the increasing supply from Far East region.

All major Russian producers were increasing production volumes adding shifts and modernizing technology. Top-50 Russian sawmills combined annual output capacity was about 12 mln.m^3 of sawn timber or ~30% of total Russia production and nearly ~40% of exports. The domestic sawmilling industry started to face saw log deficit first of all in North-West Russia. Siberia achieved record high volumes of harvesting and sawn timber production. In order to manage by-products effectively, a number of sawmilling companies in Siberia and Far East added pellet-production facilities. Investments in the sawmill industry continue to grow.

The Ministry of Industry and Trade of Russia in 2017 has submitted a draft of the strategy for the Russian forestry (sustainability) and wood processing industry development (further processing).

Special Focus kindly prepared by:

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3. Economic overview of the wood markets

3.1 Wood raw materials

In the UNECE Region (Europe, Commonwealth of Independent State Countries and North America) total removals of wood in the rough reached in 2016 1.329 billion m^3. This figure was projected to rise to 1.35 billion m^3 in 2017 and 1.36 billion m^3 in 2018.

Wood fuel represents overall 15.5% of total removals of wood in the rough in the UNECE region. This figure is expected to slightly decline to 15.4% in 2017. There are however significant differences at regional and country level.

In Europe, up to 23.5% of wood removed in the rough was used for fuel. Such figure was expected to slightly decline to 23.4% in 2017 and remain stable in 2018. At country level, the variance is considerable: wood fuel represents a remarkable 93% of total wood removed in Albania, 85% in Macedonia, 81% in Serbia, while in Western Europe the wood fuel share is especially high in Italy (59%), Denmark (58%), and France (51%). Conversely, in countries such as the UK (18%), Germany (17%), Finland (12%), Sweden (9%), and Slovakia (6%) the wood fuel share is much lower.

In the CIS region in 2016 the wood fuel share was 14.5%, a figure which might decline, while in North America the wood fuel share is at around 8.7%, a figure which is projected to remain stable in 2017 and 2018. Differences within North America are significant, as Canada share is just 2.2% while the US share is 11.2%.

However, UNECE/FAO recommends taking these data with a pinch of salt: "Estimates of roundwood volumes removed from forests for fuel are highly unreliable because few countries have consistent methods for collecting relevant data for this increasingly important end use; nevertheless, it is clear that a fairly large share of forest removals are used for energy purposes." (UNECE/FAO Forest Products Annual Market Review 2016-2017).

It is also worth mentioning that a big share of wood used for energy purposes cannot have any industrial applications: larger-diameter, good-quality logs are sold to the sawmill industry, which processes sawlogs and turns them into sawnwood.

As regards industrial roundwood, it makes up almost 85% of total removals of wood in the rough in the UNECE region, with significant differences across the region. Indeed, in Europe its share is 76%, while in the CIS region is 86% and in North America 91%. Of the total industrial roundwood removals of 1.122 billion m^3 in the UNECE in 2016 (+2% vs 2015, a further increase of around 1% was expected in 2017), 59% was accounted for by logs (the rest is mainly accounted for by pulpwood). This figure is expected to remain stable over the next couple of years. At regional level there are differences: the logs share in Europe is around 55% (projected to rise to 56% in 2018), in the CIS Countries 67% (also projected to slightly increase) and in North America 58% (expected to somewhat decrease).

In general, the demand for wood (both industrial roundwood and wood fuel) is growing across all regions. Total log use grew in the three UNECE sub-regions, particularly in Europe

Table 3.1: Industrial Roundwood main indicators, UNECE Region, 2012-2017 (1.000 m^3)

UNECE region	2012	2013	2014	2015	2016	2017	16/15	17/16
Removals	1.053.406	1.069.642	1.096.115	1.104.066	1.124.775	1.135.143	1,9	0,9
Imports	56.367	64.013	62.397	59.976	60.887	61.164	1,5	0,5
Exports	79.270	90.012	91.238	83.697	85.009	81.879	1,6	-3,7
Net trade	22.903	25.999	28.841	23.721	24.121	20.716		
Consumption	1.030.503	1.043.642	1.067.274	1.080.345	1.100.653	1.114.427	1,9	1,3

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

and the CIS region. A further increase was on the cards for the year 2017 and also for 2018.

Table 3.1 shows the main market indicators in the last 6 years in the UNECE region (2017 forecasts, data are shown in 000 m^3). Apparent consumption has increased, outpacing the growth of removals.

The UNECE region continues to be a net exporter of logs, with globally significant trade flows of softwood logs from North America and the Russian Federation to China and the Republic of Korea. After a solid growth in 2013 and 2014, net trade surplus sharply reduced in 2015, due to a marked diminution of exports. In 2016, however, exports picked up again though in 2017 they were expected to slow down. As imports are slightly growing, in 2017 the net trade surplus is expected to be slightly lower than 21 million m^3, the lowest level in the last six years. The biggest export shipments from the UNECE region were from the Russian Federation to China and Finland and from the US to Canada and China.

3.1.1. Europe – Industrial Roundwood

Table 3.2: Industrial Roundwood main indicators, Europe, 2012-2017 (1.000 m^3)

Europe	2012	2013	2014	2015	2016	2017	16/15	17/16
Removals	363.464	367.292	382.427	387.744	392.413	393.906	1,2	0,4
Imports	49.992	57.644	56.673	53.628	54.863	55.140	2,3	0,5
Exports	37.800	43.132	44.399	40.241	40.168	37.389	-0,2	-6,9
Net trade	-12.192	-14.512	-12.274	-13.387	-14.695	-17.750		
Consumption	375.656	381.804	394.701	401.131	407.108	411.656	1,5	1,1

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

Industrial roundwood (which includes mainly logs and pulpwood, and a residual category made up of pitprops, poles, posts) removals in 2016 in Europe reached 392.4 million m^3, a figure somewhat higher than previously forecast, up 1.2% vs the previous year. A further growth was expected in 2017. From the sawmill industry point of view, it is interesting to note that this increase is mainly due to a growth in softwood logs removals (+ 3% to 189 million m^3 in 2017). Early projections for 2018 also point to a further growth of softwood logs removals. Hardwood logs removals, instead, are not growing, being stable at around 34 million m^3. On the basis of the available data, pulpwood is not showing any growth.

Sweden occupied the first place in the industrial roundwood removals ranking in 2016, accounting for 66.5 million m^3 (of which 34.5 million m^3 of logs, rest mainly pulpwood). A distant second came Finland (55 million m^3, of which 24 million m^3 of logs, rest mainly pulpwood), followed by Germany (43 million m^3, of which 28 million m^3 of logs, rest mainly pulpwood), Poland (37 million m^3, of which 17 million m^3 of logs, rest mainly pulpwood) and France (25 million m^3, of which 17 million m^3 of logs, rest mainly pulpwood). It is interesting to note that in the five years to 2016 industrial roundwood removals were basically stable in France and Germany, while there was a double digit increase in Finland, Poland and Turkey (which removed 20 million m^3 in 2016). In line with removals, industrial consumption is also increasing across Europe – by more than 8% in the five years to 2016. The increase is mainly driven by higher consumption of softwood logs.

UNECE/FAO reports that "of the ten largest log-consuming countries in Europe, Finland increased consumption most (by 20%) from 2012 to 2016, followed by Portugal (+19.6%), Romania (+12.3%), Poland (+11.6%) and Turkey (+11.1%). No country in the top-ten list reduced log consumption from 2012 to 2016."

When it comes to trade, Europe continues to be a net importer of industrial roundwood. Imports have been increasing over the last few years (50 million m^3 in 2012 to 55 million m^3 in 2017) while exports show an irregular pattern. Regarding logs, UNECE/FAO reports that there was a shift in softwood log flows in central Europe in 2016, as German sawmills reduced "log imports by about 2% after a three-year period in which import volumes were up by more than 30%. Conversely, Austrian sawmills increased import volumes by 18% in 2016, reaching an all-time high". Finland increased its imports of softwood sawlogs by more than 40% in 2016 as Russia continues to be Finland's dominant supplier. Austria and Germany remain by far the largest

importers accounting for basically half of European imports of logs (in particular of softwood logs).

Czech Republic continues to be the dominant exporter of softwood logs which are directed mainly to Germany and Austria, which are big producer countries of sawnwood. At almost 4 million m³ Czech exports of softwood logs are more than twice as much as the second largest European exporter, Slovenia (1.5 million m³ in 2016). When it comes to hardwood logs, France and Germany remain the largest exporters accounting for almost half of the exports. A significant chunk of these exports is directed to Asian countries such as China, and in the course of 2017 and at the beginning of 2018, some European countries have observed a rise in exports to China also of softwood logs.

3.1.2 CIS Region – Industrial Roundwood

Timber harvested in the CIS region – which includes, *inter alia*, Russia, Ukraine, and Belarus – has been growing for a number of years. In 2016 removals grew by 8 million m³ to 218 million m³ and in 2017 removals were expected to reach 221 million m³. Softwood species account for about two thirds of total harvest, and this percentage has been growing. However, non-coniferous species' removals are also increasing.

However, the figures below shall be taken with a pinch of salt as the UNECE/FAO reports that Ukraine and Belarus did not provide any data since 2014, while in Russia, in addition to official figures, the Government has acknowledged the existence of undocumented removals. What is more, the amount of illegal harvesting remains unclear and estimates of the illegal harvest vary substantially. The undocumented removals seem to particularly affect the Russian Far East.

Table 3.3: Industrial Roundwood main indicators, CIS Region, 2012-2017 (1.000 m³)

CIS	2012	2013	2014	2015	2016	2017	16/15	17/16
Removals	196.125	199.661	208.051	210.286	218.005	221.034	3,7	1,4
Imports	713	571	553	541	470	470	-13,1	0,0
Exports	23.149	25.158	26.181	25.835	26.432	26.082	2,3	-1,3
Net trade	22.436	24.587	25.628	25.294	25.962	25.611		
Consumption	173.690	175.075	182.423	184.992	192.043	195.423	3,8	1,8

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

Based on the available and official figures, removals of both softwood and hardwood logs are increasing in Russia – this is the trend the determines the overall growth in the region. The Russian timber harvest of 2016 set a 20-year record high volume. The Russian government expects the country's timber harvest to increase by 50% by 2050. It is interesting to note that the increase in timber removals was uneven across the Russian Federation: courtesy of a strong Chinese demand, log production and consumption have particularly increased in the Far East. Also, most investments in industry capacity in recent years have been in the provinces of Siberia and Russia Far East (for more details, see the special focus on Russia). More than 90% of softwood logs exported from the Russian Federation in 2016 was shipped to just two countries, China and Finland. However, Russia supplied in 2016 about 11million m³ of softwood sawlogs to the Chinese market compared with 25 million m³ in 2007. Exports of hardwood logs showed a similar pattern. From the economic point of view, Russia was able to shake off the two shocks that heavily impacted on its economic performance in the previous years – namely the downfall of oil prices and Western sanctions connected to the involvement in the conflict in East Ukraine; as a result of the deteriorating macroeconomic picture, the ruble plummeted. GDP growth resumed in 2017, on the back of a hike in oil prices. Having been at its weakest in late 2015, the ruble appreciated during 2016 and was overall stable in 2017 (on a weaker level than the period before the two shocks).

Belarus, due to its geographical proximity, is an interesting country for Europe. Data from Belarus is not considered too easy to retrieve – removals of industrial roundwood look like being in the region of 11.3 million m³, making it a relatively large producer. In 2015, the President of Belarus signed a law banning export sales of pulpwood, veneer and saw-logs, which has entered into force in 2016. The

President himself, by decree, can make exceptions. While there is evidence that such decrees were issued (for a certain species, diameter class, and quality) since the ban is in place, there is obviously a lack of predictability that discourages aspiring purchasers of Belarusian unprocessed logs. Politically, it looks like Belarus is tentatively opening to Western Europe. According to an article of the *Financial Times*, the Belarus economy was very strained as a result of the Russian recession of 2015-2016. That is the reason why the Belarusian authorities have decided to try to reduce their economic dependence on the Russian economy. At any rate, Minsk does not want to antagonize Moscow. Vladimir Makei, Belarus's foreign minister, has emphasized that Belarus wishes a "concrete basic agreement with the EU", while relations with China have also intensified lately (*Financial Times,* November 2017).

Ukraine was in 2015 the world's fourteenth largest exporter of roundwood. In the last five years, production has remained quite stable, at around 8 million m^3. Under the existing Ukrainian policy, log exports from the country are banned for ten years as of 1 November 2015, with the exception of pine log exports, which are banned from January 2017. It remains to be seen for how long the ban will be in force. There is anecdotal evidence that the log-export ban has not been as successful as envisioned, though logs exports have obviously sharply fallen. At this writing (February 2018), the European Commission has confirmed that it will not be paying out the third and final tranche of a macro-financial assistance (MFA) package totalling €1.8bn for Ukraine until further notice. The reason the Commission has given for its decision is inadequate progress with reforms. While the Commission recognises the advances in transparency in public sector budgets and the reforms in the administration, the judicial system, and in the energy sector, Ukraine has still not fulfilled the EU's requirements in four areas, including the 10-year ban on log exports introduced on 1 November 2015.

3.1.3 North America – Industrial roundwood

Table 3.4: Industrial Roundwood main indicators, North America, 2012-2017 (1.000 m^3)

North America	2012	2013	2014	2015	2016	2017	16/15	17/16
Removals	493.817	502.688	505.637	506.036	514.356	520.203	1,6	1,1
Imports	5.662	5.798	5.171	5.807	5.554	5.554	-4,4	0,0
Exports	18.321	21.723	20.658	17.621	18.408	18.408	4,5	0,0
Net trade	12.659	15.925	15.487	11.814	12.855	12.855		
Consumption	481.158	486.764	490.150	494.222	501.502	507.348	1,5	1,2

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

Following a couple of years in which harvests were overall stable in North America, in 2016 there was a moderate growth of 1.6% (to 514 million m^3) in total industrial roundwood removals, which was expected to slightly slow down in 2017 to around 1%. These are the highest level since the period before the global economic crisis of a decade ago. Relatively to their huge harvest, imports and exports do no account for a big percentage, though the US and Canada do remain the third and fourth largest exporters in the world of industrial roundwood.

The US accounts for more than 69% of total North America' removals; the US share has been somewhat declining over the last couple of years.

According to the UNECE," improved housing markets, healthy log and lumber exports, the increased production of pellets, and strong pulp and paper demand worldwide have all been factors behind the increasing demand and supply of roundwood in North America since the 2008-2009 global financial crisis."

A strong dollar and lower appetite for raw materials in large Asian importing countries meant that log exports from the US west coast to Asia fell considerably (by 33%) from 2013 to 2015, to 6 million m^3. Indeed, the reduced demand for US logs was not limited to China; demand was also down in Japan and the Republic of Korea. US exports to China increased by 11% in 2016, however, with China buying more logs from the western US States. The US South, which historically is not a relevant exporter of logs, has seen its exports increase over the last five years.

According to official statistics, removals of industrial roundwood in Canada have been slowly but steadily increasing in the last few years. Growth especially accelerated in 2016 (+4.2%) when removals reached 157 million m^3. Regarding coniferous log exports, there was a marked increase of shipments to China and Japan in 2016, which represents a turnaround compared to what happened in the previous years, when exports of logs to East Asia declined. For this reason, exports of industrial roundwood sharply grew to reach almost 7 million m^3 – this in spite of a sharp decline of exports to the United States.

3.1.4 Global Focus and Extra Unece region – Industrial Roundwood

Table 3.5: World largest producers, exporters and importers of roundwood, 2016 (m^3)

Removals		Exports		Imports	
United States of America	356.586.043	Russian Federation	20.046.252	China	48.541.000
Russian Federation	198.194.692	New Zealand	15.951.148	Austria	9.127.648
China	162.965.000	United States of America	11.470.000	Germany	8.655.877
Canada	157.770.384	Canada	6.938.278	Sweden	6.807.097
Brazil	145.102.000	Czechia	5.727.668	Finland	5.910.529
Indonesia	74.041.000	Australia	3.931.786	India	5.509.000
Sweden	67.200.000	France	3.918.470	Canada	4.312.606
Finland	54.326.736	Papua New Guinea	3.834.185	Republic of Korea	4.102.412
India	49.517.000	Germany	3.734.438	Belgium	3.898.678
Chile	44.555.000	Norway	3.521.721	Japan	3.651.450
Germany	42.780.200	Belarus	2.930.790	Italy	2.762.500
Poland	36.842.000	Malaysia	2.857.990	Czechia	2.589.054
Australia	30.083.019	Slovenia	2.707.548	Poland	2.390.240
New Zealand	28.663.000	Latvia	2.676.170	Portugal	2.144.613
France	25.112.137	Estonia	2.527.020	Romania	1.769.227
Japan	21.258.000	Ukraine	2.476.300	Viet Nam	1.591.000
Turkey	20.389.000	Poland	2.288.728	Latvia	1.529.899
Thailand	14.600.000	Slovakia	2.157.233	France	1.368.409
South Africa	14.418.739	Spain	1.966.149	United States of America	1.241.000
Czechia	14.082.000	Solomon Islands	1.814.656	Spain	596.032

Source: FAO 2017 and EOS re-elaboration

Outside the UNECE region, China, Brazil, and Indonesia are major producers of roundwood. It is interesting to notice that at around 163 million m^3 in 2016 Chinese removals remained at the same level of the previous year. Conversely imports increased by more than 5% in 2016 and further rose in 2017 (*more information on this issue is provided below*).

Regarding exports New Zealand is the world's second largest exporter with almost 16 million m^3 in 2016 (it was less than 15 million m^3 in 2014). This increase has been driven by Chinese appetite for softwood logs. In 2017 exports to China kept going up, which was a concern for the local wood processors (*National Business Review, January 2018*). In a similar fashion to New Zealand, even Australia has seen its exports to China soar. Overall, Australia has rapidly become a major exporter of softwood logs and was the world's sixth largest log exporter in 2016. During the first half of 2017, the upward trend continued with shipments being 17% higher than in the first half 2016. In 2012, Australia's annual exports totaled only 1.2 million m^3. Just four years later, in 2016, exports of softwood logs had tripled to a record high of 3.6 million m^3, of which 96% was destined for China. If the upward trend seen observed in the first half of 2017 continues, export volumes are projected to total over four million m^3 in 2017,

which represents approximately 25% of the total softwood timber harvest in Australia. Other large non-UNECE exports include Papua New Guinea, which is the eighth (in 2016 it exported half a million more than in 2015 to 3.8 million m^3) while Malaysia is the twelfth (it exported in 2016 slightly less than 3 million m^3, approximately the same level of 2015). Out of the non-EOS European countries, Czech Republic remains a very important exporter – the largest in Europe. In 2016 its exports reached 5.7 million m^3 (+39% vs 2015).

Regarding imports, China remains by far the largest world importer with 38% of total roundwood imports; It is impressive to note that the countries ranked from second to ninth (Austria, Germany, Sweden, Finland, India, Canada, South Korea, Belgium) import overall 48 million m^3 of industrial roundwood, as much as China. Thus, it appears evident that the market dynamics of roundwood trade are strongly influenced by China. Chinese demand, according to some observers, is expected to remain buoyant over the next few years. One key factor leading to this situation – along with the dynamism of the Chinese economy – is the decision of the Chinese government to completely stop commercial logging in natural forests (as opposed to plantations), as reported by the Chinese State Forestry Administration in March 2017. In short, while many observers agreed that China overharvested in the previous years, it looks like the combination of the internal logging ban with an increasing demand for logs could put additional pressure on timber resources all over the world, at least in the short term. A different point of view is the one put forward by observers such as Risi. In a report issued at the end of 2017, it is argued that recent changes in government policies will mean that the level of activity of industries that drive demand for logs may slow down over the next few years, which could cause a decline of import of logs (www.risiinfo.com).

Other relevant non-UNECE roundwood importers include India (5.5 million m^3 imported in 2016, slightly less than in 2015), South Korea (more than 4 million m^3, which is approximately 1 million m^3 than in 2015), Japan (3.65 million m^3, basically the same share of 2015).

3.2 Sawn Softwood

The table below shows the main market indicators of the last 6 years in the UNECE region (2017 data are estimates; data are shown in 1000 m^3). Overall in the last few years sawn softwood production has been constantly growing. For 2017 a slight production decline was forecast, but that remains to be confirmed. It is interesting to note the progression of all indicators in the period 2012-2016: production, import and export grew by approximately 20 million m^3, while consumption by approximately 30 million m^3.

The construction industry traditionally plays an important role in determining the market trends of the sawn softwood industry.

In the United States, the construction markets have been growing for some years and look set to rise even in the next couple of years, which bodes well for sawnwood consumption.

Table 3.6: Sawn Softwood main indicators, UNECE Region, 2012-2017 (1.000 m^3)

UNECE region	2012	2013	2014	2015	2016	2017	16/15	17/16
Production	219.533	225.764	234.102	240.531	250.681	250.143	4,2	-0,2
Imports	52.985	56.957	60.936	63.777	70.479	70.715	10,5	0,3
Exports	92.581	98.111	103.100	105.524	112.472	111.939	6,6	-0,5
Net trade	39.596	41.153	42.164	41.748	41.994	41.224		
Consumption	179.937	184.611	191.938	198.783	208.687	208.919	5,0	0,1

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

At their 84th Conference in Munich, Euroconstruct forecast that total construction output in Europe for 2017 would grow by 3.5% (vs +2% in 2016).

In issuing the new forecast, Euroconstruct noted that "growth in construction measures in Europe reached its highest level since 2006, or shortly before the outbreak of the international financial crisis. Secondly, construction demand is rising in all 19 member countries in 2017. This is the first time that growth has been seen across the board in Europe since Germany's reunification; and it looks like this feat will be repeated in 2018".

Furthermore, "The favourable development in construction demand is partly due to robust economic growth and its positive implications for household income, corporate profits and the state of public finances. Moreover, the low interest rate level, immigration and internal migration flows, as well as the investment backlog that has accumulated in areas like infrastructure since the financial crisis is supporting the upswing. There are also clear constraints on the public sector's scope to take action."

Overall, Euroconstruct foresees that in 2017 construction demand would be strongest in Hungary (+25%), followed by Ireland (+15%), Sweden (+10%), and Poland (+9%). "Hungary will also post the highest growth rates for the next three years through 2020 (+33%). In addition to state subsidies for residential construction, the more consistent use of EU funds especially for civil engineering will play an important role here. In the three-year growth projections Hungary is once again followed by Ireland (+28%), then comes Poland (+25%), the Czech Republic and Portugal (+15% respectively). In Germany construction activity in 2017 will even increase more strongly than in 2016, driven by higher demand for residential accommodation, a greater willingness to invest on the part of companies and a civil engineering drive by the German government. Although growth will slow down significantly in the mid-term, investment in both the residential and the infrastructure segments is expected to be high in the long term."

In Russia, according to PR Newswire (www.prneswire, March 2018), the construction industry's output value in real terms is expected to post a compound annual growth rate (CAGR) of 1.76% over the forecast period (2016–2021). After average annual growth of 12.0% during 2010–2014, the Russian construction industry registered a decline of 7.4% in 2015 and 2.1% in 2016 in real terms. This was due to Western sanctions, a fall in revenue generated from oil exports, and weak European market conditions. All these factors reduced the government's infrastructure expenditure. The industry was expected to finally resume positive trends in 2017.

3.2.1 Europe – Sawn Softwood

Table 3.7 Sawn Softwood main indicators, Europe, 2012-2017 (1.000 m^3)

Europe	2012	2013	2014	2015	2016	2017	16/15	17/16
Production	97.091	98.091	102.230	104.759	107.837	108.090	2,9	0,2
Imports	31.079	31.447	34.159	34.569	35.855	36.079	3,7	0,6
Exports	43.787	45.245	47.214	47.697	49.518	49.752	3,8	0,5
Net trade	12.708	13.799	13.054	13.128	13.663	13.672		
Consumption	84.383	84.292	89.176	91.631	94.174	94.418	2,8	0,3

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

This sub-chapter focuses on the European countries which are not members of EOS. The EOS countries are thoroughly analysed subsequently. However, the largest producers of sawn softwood are EOS Members Countries. Therefore, in order to provide a full picture of the sawn softwood markets in Europe, they need to be mentioned.

Sawn softwood production in Europe has been growing in the period 2012-2017. While there are some significant regional differences which will be analysed more thoroughly in the EOS market survey, it is worth remarking that the sawn softwood markets look overall in a good shape. It is noticeable that exports are doing well: in the 5 years to 2016, Europe has added 6 million m^3 to almost 50 million m^3. Projections for 2017 point only to a slightly increase of exports, but there are reasons to believe that even in 2017

the growth of exports was higher than it appears in the above table. Imports are also growing – by 5 million m³ in the 5 years to 2016 (see chapter 4 for more information).

The trends outlined above point to an increase of consumption – which in the 5 years to 2016 rose by almost 10 million m³, and was expected to further grow in 2017.

As previously mentioned, the major European producers are EOS Members Countries: Germany, Sweden, Finland, Austria, France. Turkey is the sixth largest producer and there are interesting developments in this Mediterranean country: production is healthily growing as Turkey has added 1.5 million m³ in the five years to 2016 (+35% to 5.8 million m³; however, production was not projected to grow in 2017 and 2018). Turkey does not export any sawn softwood, so the increase of production caters to growing local demand. Relatively large non-EOS European producers also include Poland (where, according to the UNECE/FAO, production was expected to slightly grow to 4.4 million m³ in 2017, and Czech Republic, has a stable production at 4 million m³ – for more information see special focus on Poland). There were no significant capacity changes in the European sawmill industry in 2016-2017, although some smaller mills closed for profitability reasons. While there are local differences, this was a trend which was quite common over the continent. Investments have been focusing on replacements and increasing capacity in existing sawmills.

Regarding consumption, Turkey has well established herself as the fourth European consumer, with consumption on the rise for many years, having reached almost 7 million m³ in 2016. Turkey is now the fourth largest European consumer, after Germany, UK, and France, having a higher consumption than Sweden, Austria and Italy. In Italy consumption reached 4.8 million m³, and it was expected to further grow – albeit slightly in 2017-2018. The five largest consumers of sawn softwood in Europe account for 52% of total consumption in the sub-region. The UNECE-FAO reports that "Estonia, Austria, Finland, Norway and Latvia (in descending order) have the highest per capita consumption of sawn softwood".

Regarding trade, Eurostat reports that EU28 exports to overseas markets rose by 7% in 2017 vs 2016, to 13.5 million t[1]. The MENA Area (Middle East and North Africa) and East Asia are the two macro-areas which are most relevant as export markets for most European exporters. They showed diverging dynamics. Exports to China increased by 40% to 1.6 million t, while exports to many North African and Middle Eastern countries remain relatively low compared to recent years. The import licenses system caused a drop of exports to Algeria, while, on a brighter side, deliveries to Egypt slightly rose, though there is untapped potential. Exports to Japan were overall on a satisfying level. An interesting development has been taking place in the US: deliveries to the United States have been noticeably growing over the last couple of years, with German and Swedish exporters performing particularly well in that market.

Regarding imports, flows are mainly intra sub-regional; extra sub-regional imports account for about 20% of imports. Sawn softwood to Europe is exported mainly from CIS countries. Overseas imports to Europe remained marginal in 2016 and early projections show that this trend has continued in 2017.

3.2.2 CIS Region – Sawn Softwood

Table 3.8: Sawn Softwood main indicators, CIS Region, 2012-2017 (1.000 m³)

CIS	2012	2013	2014	2015	2016	2017	16/15	17/16
Production	34.408	35.198	36.178	36.618	39.056	39.586	6,7	1,4
Imports	4.612	5.224	4.981	5.196	5.125	5.125	-1,4	0,0
Exports	21.149	22.186	23.902	25.311	27.525	28.034	8,8	1,8
Net trade	16.537	16.962	18.921	20.114	22.400	22.909		
Consumption	17.871	18.236	17.256	16.504	16.656	16.677	0,9	0,1

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

Russia accounts for around 88% of total sawn softwood production in the CIS region. Over the period 2012-2017 the region added almost 5 million m³ to production. The region is clearly extremely export-oriented due to the amount of

1 Eurostat data are more reliable when expressed in tonnes

forest resources and relatively low population. Exports have been growing throughout the last 5 years and the trade surplus keeps increasing. As a result of a stronger ruble, the sawmill industry margins in Russia shrank.

Even though the ruble has appreciated (according to the European Central Bank 1 € was worth 91 RUB in January 2016, but 64 RUB in January 2017; in 2017 it has somewhat depreciated again - €1 was traded for 68 RUB in January 2018), Russia is continuing to take advantage of the booming Chinese demand. Producers decided in 2016 to re-orient their products lines from countries such as Uzbekistan and Egypt to China. In 2016 Russia exported 20% less sawn softwood to the MENA region then in 2015 (2.8 million m^3), and 21% less sawn softwood to the CIS region then in 2015 (3.3 million m^3). Exports to China soared by 31% in 2016. China is now absorbing more than half of total exports of Russian softwood lumber. These trends continued in 2017 and many elements point to a continuation even in the coming years. Some figures shed light on the growing importance of China for Russia: the biggest country in the world became the leading supplier of sawn timber to China in 2016 with about 12.8 million m^3. Ten years back Russia exported to China around 4 million m^3, while fifteen years ago around 1 million.

Imports of Russian sawn softwood in Europe rose by 7% in 2016 to 3.5 million m^3. The Baltic States are the largest European customers for Russian sawn softwood, purchasing 73% of Russian exports of rough sawn Siberian spruce to Europe in 2016.

According to the UNECE/FAO, "In 2016, large Russian sawmilling companies continued to implement their strategy of increasing export sales and selling in the lower-priced domestic market on a more restricted basis". WhatWood (*the only Russian consulting company with core specialization in the timber industry analytics*) reports that many greenfield projects, and the modernization of existing plants, have been taking place in the Russian Federation, with the potential for added capacity of 3 million m^3.

Regarding Belarus, investments to add capacity and efficiency have been taking place over the last year. It seems that the strong limitations on export of logs have helped the local industry. Softwood lumber exports from Belarus to the European Union countries have gone up during January - September 2017 by 47% to a total of 1.25 million m^3. The EU top importer was Germany, which increased its softwood lumber imports from Belarus by 43%, to a total volume of almost 400,000 m^3 during the mentioned period (Timber Industry News, January 2018).

Regarding Ukraine, production seems to have grown to 2.2 million m^3. Ukraine, in spite of a relatively large population of around 45 million people, consumes just around 300,000 m^3, thus having one of the lowest sawn softwood consumption pro capita in Europe. The remainder of Ukraine production is exported.

3.2.3 North America – Sawn Softwood

Production in North America has been healthily growing for a number of years. 15 million m^3 have been added over the period 2012-2016. It has been following lively markets: consumption increased by around 20 million m^3 over the least five years; net trade has massively shrunk with imports consistently increasing (+12 million m^3 since 2012 to 29.5 million in 2016). Exports have also been growing but at a slower pace than imports. Over the period 2012-2016

Table 3.9: Sawn Softwood main indicators, North America, 2012-2017 (1.000 m^3)

North America	2012	2013	2014	2015	2016	2017	16/15	17/16
Production	88.034	92.475	95.694	99.153	103.788	102.467	4,7	-1,3
Imports	17.294	20.287	21.796	24.011	29.498	29.511	22,9	0,0
Exports	27.645	30.680	31.984	32.517	35.429	34.153	9,0	-3,6
Net trade	10.351	10.393	10.189	8.506	5.930	4.642		
Consumption	77.683	82.083	85.506	90.648	97.858	97.825	8,0	0,0

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

Canadian production has grown faster than US production (+22% vs +14%).

US sawn softwood output was 55.6 million m^3 in 2016, which is 3.4% more than 2015. Production gains were highest in the US South (+4.1%), followed by the Midwest and Northeast regions (+3.1%) and the US West region (+2.5%). At the International Softwood Conference 2017, production for 2017 was estimated to have further grown by more than 5%. The expansion is expected to continue even in 2018 and 2019. The internal demand in the US remains high. First, the US economy keeps outdoing expectations; in 2017 it grew at a rate slightly below 2.5% and in 2018, on the back of a strong stimulus due to the tax reform, GDP growth is expected to reach 2.5%. Housing starts are rising in line with the economy; according to official government sources, an estimated 1,202,100 housing units were started in 2017. This is 2.4% above the 2016 figure of 1,173,800. Single-family units, which consume approximately 65% more sawn softwood and wood-based panels per family unit than multifamily construction did particularly well. Industry-based promotional efforts, such as the Softwood Lumber Board (SLB) initiative to boost wood use (including cross-laminated timber) in taller/larger apartment buildings, were fruitful and also contributed to the increase in North American wood consumption. Based on the elements above, it is not surprising that US sawn softwood consumption is on the rise. It was close to 80 million m^3 in 2016 and was projected to surpass 84 million m^3, with healthy growth expected even in 2018.

Regarding trade, US sawn softwood exports went up by 3.5% in 2016 but were projected to drop again 2017 by 2% to 2.8 million m^3. China absorbed 640,000 m^3 of US sawn softwood in 2016; this figure, while being higher than in 2015, is approximately 200,000 m^3 lower than in 2014. Imports to the US are predominantly from Canada (more than 95%), but European countries such as Sweden and Germany have seen exports to the US soar (see chapter on Europe for more information).

In 2016 Canadian sawn softwood production rose by 6.2% to 48.2 million m^3. But in 2017 production was expected to stagnate and in 2018 to decline by 3.5%. This is possibly connected to the ongoing Softwood Lumber Dispute with the United States. Having hovered around 33-36% in the fifteen years to 2007 the Canadian sawn softwood share in the US market dropped to 26% after the global economic crisis. Over the last couple of years, it recovered to 32%. The end of the nine-year US–Canada Softwood Lumber Agreement in mid-October 2015 resulted in an 18-month window of duty-free Canadian lumber exports to the US. Preliminary countervailing duties on Canadian lumber came into effect in late April 2017 and antidumping duties in late June 2017. The ruling on injury from the U.S. International Trade Commission came into effect in December 2017, which means that final countervailing (CVD) and anti-dumping duties (AD) on Canadian lumber shipments to the US are in effect as of that date. The combined CVD/AD duty paid by most Canadian exporters is 20.23% (Random Lengths, January 2018). While the Canadian industry has been able to get by thanks to soaring lumber prices, it remains to be seen whether the dispute will impact on the Canadian industry in the future. A new softwood lumber agreement might be negotiated in 2018 but at present Canadian producers are looking at other export markets with growing interest. Unlike Russia and Europe, exports to China have declined over the last few years (from 6.4 million m^3 in 2012 to 5.2 million m^3 in 2016) but there are optimistic forecasts which suggest that over the next few years the peak reached in 2012 will be achieved once again. The most relevant flow remains the one to the US with 25 million m^3 exported in 2016.

3.2.4 Global Focus and Extra Unece region – Sawn Softwood

Table 3.10: World largest producers, exporters and importers of sawn softwood, 2016 (1.000 m³)

Production		Exports		Imports	
United States of America	55.627.000	Canada	32.640.570	United States of America	28.836.490
Canada	48.160.915	Russian Federation	24.893.000	China	21.075.000
China	34.375.000	Sweden	12.996.000	United Kingdom	6.191.000
Russian Federation	34.287.975	Finland	8.605.126	Japan	6.099.249
Germany	21.109.033	Germany	7.282.000	Germany	4.875.000
Sweden	17.900.000	Austria	5.300.668	Egypt	4.439.000
Finland	11.370.000	Chile	3.170.900	Italy	3.980.716
Austria	9.062.000	Latvia	2.793.761	Netherlands	2.475.800
Japan	8.622.000	United States of America	2.788.281	France	2.291.031
Brazil	8.600.000	Ukraine	2.200.000	Uzbekistan	2.087.269
Chile	8.309.100	Brazil	2.109.940	Saudi Arabia	1.898.000
France	6.255.729	New Zealand	1.730.664	Algeria	1.816.000
Turkey	5.819.000	Czechia	1.537.194	Austria	1.806.950
Australia	4.429.250	Belarus	1.467.736	Republic of Korea	1.800.000
Poland	4.352.000	Romania	1.404.848	Denmark	1.535.000
New Zealand	4.234.000	Belgium	948.489	Mexico	1.514.000
Romania	4.100.000	France	906.931	Belgium	1.291.470
Czechia	3.980.000	Slovakia	810.377	Turkey	1.093.000
United Kingdom	3.557.057	Ireland	803.025	Estonia	1.060.711
Latvia	3.206.813	Estonia	794.711	Morocco	1.050.000

Source: FAO 2017 and EOS re-elaboration

Outside the UNECE area, the largest producer remains China. China's production sharply increased in 2016 compared with 2015 (34 million m³ vs 30.5 million in 2015) on the back of a strong construction industry. The Chinese economy is expected to somewhat slow down in the coming years: growth rates of GDP are set to hover around 6-7%, while in the previous decade they reached double-digit figures. However, many observers reckon that government policies are more and more geared to foster domestic consumption, which is expected to push up consumption of wood products. The UNECE/FAO reports that: "wood product demand is expected to be boosted by plans to increase the number of "green" buildings from the current 2% of new buildings to 50% of all new construction by 2020, which will require upgrades to construction building materials" (UNECE/FAO Forest Products Annual Market Review 2016/2017). In 2016, the Chinese government released official documents to promote prefabricated buildings in China, which includes wood construction. All of these elements contribute to soaring imports of sawn softwood (21 million m³ vs 15 million m³). Figures presented at the International Softwood Conference 2017 by Shen Wei point to a further growth of sawn softwood imports in 2017:

Table 3.11: China sawn softwood imports (1.000 m³), Jan-Jul 2017, million m³

Rank	Country	Volume millions (m³)	Market Share
1	Russia	8.4	57%
2	Canada	2.9	20%
3	Finland	1.0	7%
4	Sweden	0.4	3%
5	Chile	0.4	3%
Other		1.5	10%
Total		14.6	100%

Source: Wei (International Softwood conference 2017)

China's imports from Russia have consistently grown in 2016 surpassing 11 million m³, and this figure looks set to further increase as imports in the first 7 months of the year were 18% higher year-on-year. Trends which were apparent in 2016 continued even into 2017: the second largest supplier of sawn softwood to China remains Canada but with slightly

declining figures (-8% in Jan-Jul 2017). It will be interesting to see whether Canadian operators because of the US duties connected to the softwood lumber dispute between US and Canada will redirect some of their shipments to China. Meanwhile exports from the Scandinavian countries, particularly from Finland (+67% in Jan-Jul 2017 vs Jan-Jul 2016), keep growing. China has seen over the last few years a more territorially-balanced growth: the inland regions are also developing thanks to new infrastructures. Under the policy of Yangtze River Economic Zone implementation, the wood processing industry is gradually moving from east to west. Some new inland timber markets have appeared, like Wuhan, Chengdu, Chongqing, Zhengzhou, Xinjiang and Jiangxi. The China-Europe railway makes it possible for these inland timber markets to import timber with lower prices from Russia and Europe.

According to analysts such as Risi (www.risiinfo.com, March 2018), changes in government policies, will have an impact on the industries that drive demand for logs and sawnwood, which will mean Chinese imports of sawn softwood will probably keep growing over the next few years, albeit at a much slower pace. It remains to be seen whether this will turn out to be true.

Japan is the second largest producer and importer outside the UNECE region. Japanese sawn softwood production seemed stable in 2016 at around 8.6 million m^3. Japan imports of sawn softwood reached 6 million in 2016 (up from 5.6 million in 2015). While Japanese demographic prospects are not bright (the population is expected to decline by 40 million people in 2020), in the short-term the outlook for the construction market seems positive. Actual housing starts have consistently done better than observers' forecasts: in 2017 they were expected to reach 1 million units, up from 800,000 in 2009. Wooden housing starts traditionally make up a relevant share – in 2017 their share was expected to be around 57%.

The only significant country exporters of sawn softwoods outside the UNECE region in 2016 were Chile, Brazil and New Zealand (in descending order, by volume). Chile's export markets are diversified, with significant volumes shipped to Asian, Latin American and Middle Eastern markets while New Zealand's major markets are more restricted and are predominantly in the Asia-Pacific region – China, the US, Vietnam, and Thailand, in descending order. Brazil mainly exports to the United States. It will be interesting to see whether the softwood lumber dispute between the US and Canada will have an effect on Brazilian exports.

3.3 Sawn Hardwood

The table below shows the main market indicators for the last six years in the UNECE region. Overall at UNECE level production is somewhat increasing; after a year of stagnation in 2016, in 2017 production looked to be slightly up by 1%;

Table 3.12: Sawn Hardwood main indicators, UNECE Region, 2012-2017 (1.000 m^3)

UNECE region	2012	2013	2014	2015	2016	2017	16/15	17/16
Production	36.053	37.505	39.834	41.186	41.190	41.618	0,0	1,0
Imports	6.078	5.984	6.556	6.578	6.537	6.724	-0,6	2,9
Exports	9.845	9.755	11.421	11.934	12.340	12.272	3,4	-0,5
Net trade	3.767	3.771	4.865	5.356	5.803	5.548		
Consumption	32.287	33.734	34.969	35.829	35.388	36.070	-1,2	1,9

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

Consumption (which is always calculated as apparent consumption: production + imports – exports) of sawn hardwood in the UNECE region was 35.3 million m^3 in 2015, a 1% drop compared with previous years. In general, it looks like that trends apparent in the last few years (expanding sawn softwood markets, relatively stagnating sawn hardwood markets) are continuing, at least in the short-term.

The UNECE region has a trade surplus which has increased over the years to reach 6 million m³ in 2016. However, a growth imports, together with an export slowdown, was expected to reduce the net trade surplus.

3.3.1 Europe – Sawn Hardwood

Table 3.13 Sawn Hardwood main indicators, Europe, 2012-2017 (1.000 m³)

Europe	2012	2013	2014	2015	2016	2017	16/15	17/16
Production	12.989	12.953	13.043	13.629	13.685	13.689	0,4	0,0
Imports	4.627	4.396	4.712	4.771	4.850	4.907	1,7	1,2
Exports	4.960	4.743	5.545	5.859	5.743	5.546	-2,0	-3,4
Net trade	333	347	833	1.088	893	639		
Consumption	12.657	12.606	12.210	12.541	12.792	13.050	2,0	2,0

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

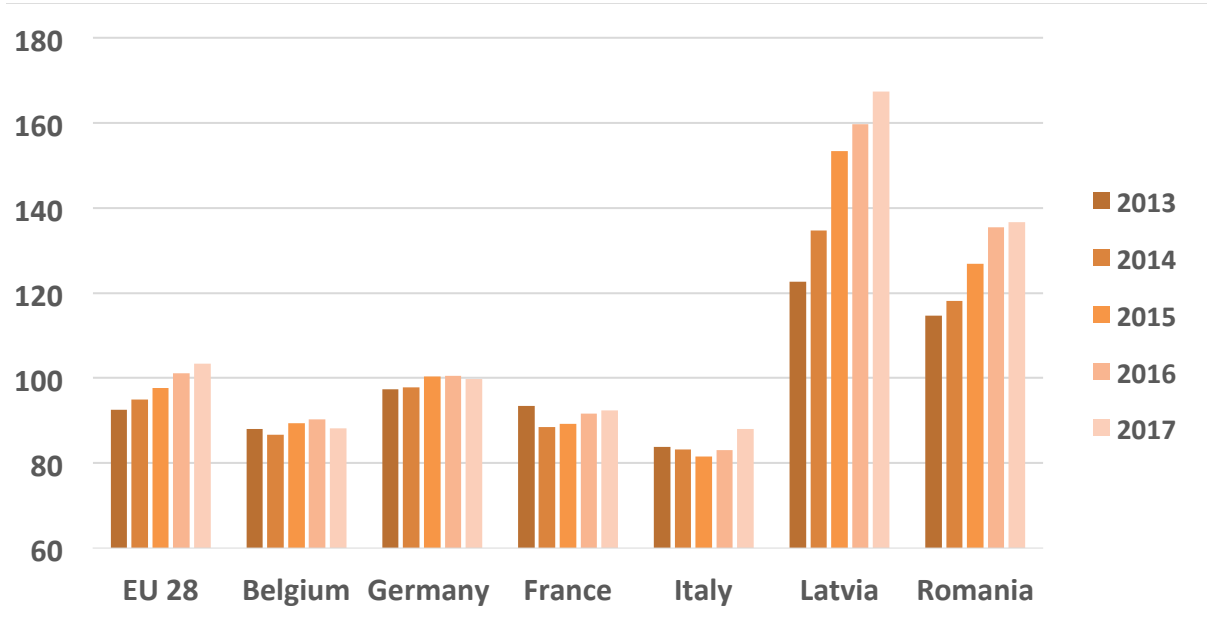
European production of sawn hardwood has been quite flat over the last couple of years, at levels below the peak achieved in 2006-2007 before the global economic crisis. An interesting dynamic is taking place in Croatia. Production in the Balkan country has increased by 77% in the five years to 2016 to 1.3 million m³. Turkey remains the largest producer of the area with a stable production in 2016 of 2.6 million m³.

Consumption of sawn hardwood remains relatively subdued, but it is slowly growing. Turkey is by far the largest national market of the area, and it is fed almost entirely by internal production. In the EU28 consumption has been growing at an unremarkable pace, though markets are definitely livelier than a few years back. Overall in 2017 the spirit improved when compared to a few years ago. Country by country reports also dealing with hardwood production are available in chapter 4.

The sawn hardwood markets are connected to the level of furniture manufacturing and wood-joinery activity. Below a brief analysis of those is provided.

The figure below shows the Eurostat calendar adjusted index of furniture manufacturing (index 2010=100). Overall,

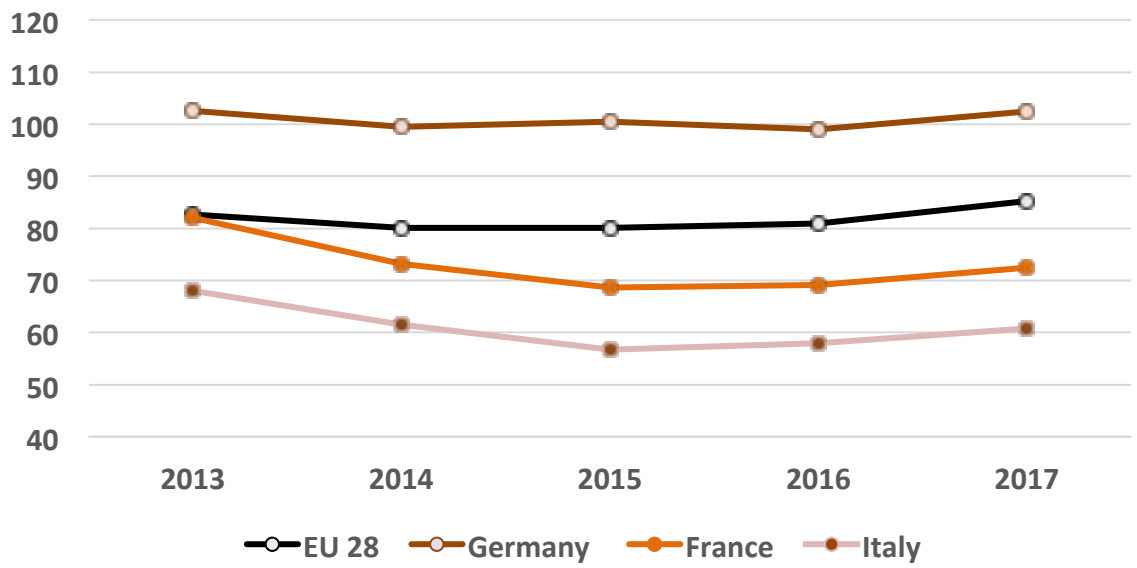
Figure 3.1: Index of Furniture Manufacturing activity, selected European countries (Index 2010=100)



Source: Eurostat 2018 and EOS re-elaboration

at EU level, the intensity of activity keeps getting higher, with the 2016 level finally surpassing the base 2010 level and 2017 confirming this trend. There are significant local differences. In Central-Eastern European countries the sector is growing, while in the core EU countries on the one hand Germany has a stable performance over the last few years, while on the other hand countries such as Italy and France have seen their activity shrink. The decline was more marked in Italy, which however grew a little faster than France in 2017. The index value of the latter reached 92 in 2017, while Italy's value was 83. A large European country which is doing well is the UK, along with Poland, the latter being a very relevant furniture manufacturer. Scandinavian markets such as Sweden and Denmark are recovering, though they remain below the 2010 level.

Figure 3.2: Index of Wood-joinery Activity, selected European Countries (Index 2010=100)



Source: Eurostat 2018 and EOS re-elaboration

The figure above, which is available only for a few countries, represents the wood-joinery activity over the last few years. It depicts a similar situation to the furniture manufacturing activity: in Germany the level of activity in stable, while in France and particularly in Italy there is a remarkable decline over the last few years, which however came to an end in 2016, when both countries have experienced a modest recovery, which was repeated in 2017. It remains to be seen whether this will be confirmed in 2018.

Another important market for hardwood is the flooring market. The UNECE/FAO reports that "demand for hardwood flooring increased in most European markets in 2016, particularly in Belgium, France and Sweden. Competition from flooring alternatives remains fierce, however, especially laminates and other products with a wood-look surface". Oak was used in over 80% of wood flooring manufactured in Europe in 2016; the share of tropical woods continued to decline (please see just below for more information on tropical woods).

As far as trade is concerned, the net trade surplus has been shrinking over the last couple of years. Exports are slightly declining, and imports are somewhat rising. Exports by Croatia, the leading exporter among the EU countries, have slightly grown in 2016, while German exports were overall stable. The third largest exporter was Romania.

Some recent data regarding sawn tropical hardwood are available: according to the International Tropical Timber Organization, latest statistics (to November 2017) show that tropical sawn hardwood imports declined sharply last year. The EU imported 822,600 m^3 of tropical sawn hardwood between January and November 2017, 20% less than the same period in 2016. In the eleven-month period, tropical sawn hardwood imports declined from all 10 of the top suppliers to the EU.

From Cameroon imports fell 21% to 293,800 m^3, from Gabon 21% to 93,700 m^3, from Brazil 6% to 92,500 m^3, Congo 18% to 49,900 m^3, Cote d'Ivoire 21% to 45,200 m^3, Ghana 19% to

18,600 m³, Democratic Republic of Congo 51% to 15,000 m³ and Ecuador 11% to 9,600 m³. The decline of tropical species exported to Europe is long-term as before the global financial crisis the level of European imports of tropical species was more than 50% than now. In 2016, EU imports of tropical sawn hardwood were 1.04 million m³, basically unchanged from the previous year but at historically very low levels, fully 40% below the levels observed before the global financial crisis.

The decline in tropical sawn hardwood trade affected nearly all the main EU countries. Belgian imports were down 29%, at 251,000 m³, French 24% at 98,000 m³, Italian 30% at 93,400 m³, Spanish 21% at 53,200 m³, German 20% at 37,300 m³, Portuguese 9% at 26,600 m³, and Ireland 14% at 13,000 m³. UK imports were only down 1% at 81,900 m³.

It is interesting to note that Belgium, a relatively small country, is the main importer of sawn tropical hardwood. However, this does not seem connected to consumption patterns but rather to distribution channels (Itto Newsletter, 1-15 February 2018).

3.3.2 CIS region – Sawn Hardwood

Table 3.14 Sawn Hardwood main indicators, CIS Region, 2012-2017 (1.000 m³)

CIS	2012	2013	2014	2015	2016	2017	16/15	17/16
Production	3.060	3.099	3.301	3.233	3.418	3.525	5,7	3,1
Imports	78	101	103	88	108	108	22,3	0,0
Exports	1.292	1.080	1.413	1.988	2.101	2.155	5,7	2,5
Net trade	1.214	979	1.310	1.900	1.993	2.046		
Consumption	1.846	2.120	1.991	1.333	1.425	1.479	6,9	3,8

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

CIS sawn hardwood production has been trending slightly upward over the last few years. It was projected to have reached a figure just short of 3.5 million m³ in 2017. The most relevant trends, however, are those of exports and consumption. The UNECE/FAO reports that "continuing currency weakness, combined with only a slow recovery in domestic consumption and increased controls on log exports, led to a 5.7% rise in sawn hardwood exports from the sub-region in 2016, to 2.1 million m³"; while the ruble has appreciated, exports were still projected to slightly grow in 2017. Russian sawn hardwood exports to China did particularly well in 2016, having grown by 9% to 1.27 million m³. This is the largest quantity of sawn hardwood which has ever been exported to China. As a result of the plummeting ruble, and the resulting weak purchasing power of the local consumers, consumption strongly fell in the region since the beginning of 2015. It has since somewhat recovered but remains much lower than some years ago.

The Ukrainian sawn hardwood sector has been hampered by the ongoing conflict in the east of the country. The economy has still to make up for the ground loss in 2014/2015 (cumulative loss of 16%) and both in 2016 and 2017 the local GDP grew by slightly more than 2%. The World Bank reckons that Ukraine needs a 4% growth to reduce poverty and improve living standards for the population. Local consumption of sawn hardwood remains very low (around 80,000 m³), thus Ukraine is very export-oriented, its main markets being Eastern Member States of the EU, such as Romania, Poland and Lithuania. Exports reached 475,000 m³ in 2016.

While recent data from Belarus are unavailable, sawn hardwood production was expected to hover around 250,000 m³. Exports of sawn hardwood from Belarus, mainly of lower-grade alder, aspen and birch, declined by 21% in 2016, to 113,000 m³.

3.3.3 North America – Sawn Hardwood

Table 3.15 Sawn Hardwood main indicators, North America, 2012-2017 (1.000 m^3)

North America	2012	2013	2014	2015	2016	2017	16/15	17/16
Production	20.004	21.453	23.490	24.323	24.087	24.404	-1,0	1,3
Imports	1.373	1.488	1.741	1.718	1.578	1.708	-8,1	8,2
Exports	3.593	3.933	4.463	4.086	4.495	4.571	10,0	1,7
Net trade	2.220	2.445	2.722	2.368	2.917	2.863		
Consumption	17.784	19.008	20.768	21.955	21.171	21.541	-3,6	1,7

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

In North America both production and consumption of sawn hardwood have been trending upwards in the period 2012-2017. Over the 6 years to 2017 production grew by 22% and consumption by 21%. A slowdown was observed in 2016, in which production dropped to 24.1 million m^3, but in 2017 it was expected to somewhat grow again to reach slightly less than 24.5 million m^3. Consumption is foreseen to slightly grow to 21.5 million m^3.

In the US hardwood market production peaked at the end of the previous century. During the global economic crisis, it reached the lowest level since 1960 (beginning of available data), but then it has quite recovered. In spite of a stagnating 2016, US sawn hardwood production grew by 20% in the 5 years to 2016. Growth was curtailed in 2016 in response to a downturn in domestic demand for pallets, board roads and railway ties. The board roads and mat timbers segments, however, were projected to rise to 1.7% in 2017. Early projections point to a stable production of 22.5 million m^3 even into 2018, but that remains to be confirmed. Canadian production fell by 11% in 2016, but overall in the period 2012-2016 a 22% growth was observed. Regarding demand, while housing starts have generally done well over the last few years in the US, demand for hardwood related subsectors (such as millwork, flooring, furniture) has not kept up (Snow, International Hardwood Conference 2017). Flooring demand is half of what it was in 2005. However, in 2017 (with the exception of furniture), demand for millwork, cabinets and flooring was expected to go up. Moreover, the UNECE/FAO reports that "since 2014, the hardwood industry has been losing market share in the pallet industry, notably to softwood, due to uncompetitive prices and an increased emphasis on uniform appearance and the reduced risk of mould". Pallets and containers will remain subdued in 2017, with demand down 9% compared with 2016. Reduced railroad maintenance and construction projects lowered the demand for railroad ties in 2016, and the decline was expected to continue into 2017.

Declining oilfield investments (and subdued non-residential building starts) are among the reason behind the shrinking demand in Canada in 2016, which fell by over 9% to 1.7 million m^3. Demand was expected to further shrink in 2017 to 1.3 million m^3. Trade of sawn hardwood is mainly intracontinental with Canada importing 520,000 m^3 in 2016 and the US importing around 350,000 m^3 from Canada, which is more or less stable with the 2015 levels. But the UNECE/FAO reports that US imports of temperate sawn hardwood from outside North America increased "by 13% in 2016, to 139,440 m^3, driven by a significant rise in imports (mainly of beech) from France, Germany and Slovenia". However, Eurostat report that the significant increase observed in 2016 came to a halt in the first part of 2017, with exports of sawn hardwood from European countries to the US somewhat lower than in H1 2016 (Eurostat, 2018).

The lion's share of US sawn hardwood exports is absorbed by China (51% overall in 2016, up from 47% in 2015). Canada imported 13% of US sawn hardwood exports, while Europe imported 9%. US exports grew double-digit in 2016 (they reached 3.1 million m^3) and they are set to continue to grow even into 2017 and possibly 2018, albeit at a much more moderate pace.

In 2016, the UNECE/FAO reports that Canadian sawn hardwood overseas deliveries increased by 7% in 2016, to 174,000 m^3, including 88,000 m^3 to China.

3.3.4 Global Focus and Extra Unece region – Sawn Hardwood

Table 3.16 World largest producers, exporters and importers of sawn hardwood, 2016 (m^3)

Production		Exports		Imports	
China	42.786.000	Thailand	4.161.000	China	10.419.000
United States of America	22.524.000	United States of America	3.965.000	United States of America	962.000
Viet Nam	6.000.000	Malaysia	2.012.444	Italy	752.000
Brazil	5.997.000	Russian Federation	1.455.000	Viet Nam	751.000
India	4.889.000	Croatia	919.552	Thailand	690.000
Indonesia	4.169.000	Germany	705.000	Canada	616.278
Thailand	3.700.000	Lao People's Democratic Republic	675.000	Egypt	567.000
Malaysia	3.403.000	Gabon	635.000	Belgium	463.000
Turkey	2.680.000	Romania	627.382	United Kingdom	426.000
Russian Federation	2.506.275	Cameroon	627.000	Germany	393.000
Nigeria	2.000.000	Canada	530.078	Mexico	362.000
Canada	1.563.300	Ukraine	475.000	India	347.000
Myanmar	1.530.400	Latvia	471.421	Poland	335.224
Argentina	1.502.000	France	440.378	Philippines	316.996
Romania	1.500.000	Viet Nam	438.601	France	294.465
France	1.324.431	Indonesia	431.000	Netherlands	293.000
Croatia	1.301.597	Brazil	404.940	China, Taiwan Province of	242.955
Lao People's Democratic Republic	1.200.000	Belgium	385.000	Japan	215.630
Germany	1.068.000	Bosnia and Herzegovina	321.040	South Africa	190.950
Cameroon	1.000.000	Philippines	318.000	Austria	190.577

Source: FAO 2017 and EOS re-elaboration, 2017 data are estimates

China is by far the world's largest hardwood producer. The combined production of the second, third, fourth, and fifth largest producers are equivalent to China's production. China added in 2016 more than 4 million m^3 and at almost 43 million m^3 its production was almost one third of the total global output. Chinese production mainly services an internal market hungry for sawn hardwood, with China accounting for 41% of global furniture production and a sector which is projected to grow fast over the next few years (CSIL, World Furniture Outlook, 2017). With the exception of the United States, the most important hardwood producers are all mainly tropical hardwood producers, notably Vietnam, Brazil, India, Malaysia, Indonesia, and Thailand.

China is also – and by far – the world's largest importer, accounting for a whopping 46% of the total hardwood imports at global level. More and more, imported volumes of sawn hardwood are not manufactured into consumer goods that are subsequently re-exported by China, but they are consumed within the Chinese state. China is so relevant that Thailand, the world's largest exporter with 4 million m^3, sends most of its foreign deliveries to China. Malaysia, the third largest exporter has a much more diversified group of shipments destination, including European countries such as Benelux, France, and the UK.

Data taken from the FAO Database and the UNECE/FAO Forest Products Annual Market Review, unless otherwise stated.

3.4 Overview of the wood energy markets

At this writing (March 2018), the Joint Wood Energy Inquiry[2] has not yet been updated. As per the latest available data, wood energy accounts for 3.5% of the total primary energy supply (TPES) and 38.2% of the renewable energy supply (RES) in the UNECE region, making it an important source of renewable energy. Woody biomass covers 21 to 23% of the primary

energy demands of Finland and Sweden and 14 to 16% of the primary energy demands of Estonia and Austria.

In many EU Member States, wood was the most important single source of energy from renewables. As reported by EUROSTAT "Wood as a source of energy" (*Data extracted in July 2017. Next update: July 2018*) wood and wood products accounted for 5.9 % of the total energy consumed within the EU-28 in 2015. The share of wood and wood products in gross inland energy consumption ranged from over 20 % in Latvia, Finland and Sweden down to less than 1 % in Cyprus and Malta. Wood was the source for more than three quarters of the renewable energy consumed in Estonia, Lithuania, Latvia, Finland, Hungary and Poland. By contrast, the share of wood in the mix of renewables was relatively low in Cyprus and Malta (where the lowest share was reported, 5.5 %); this was also the case in Norway (6.9 %). Although potential biomass supplies within most EU Member States are substantial, some countries import significant volumes of fuel wood as they seek to meet their renewable energy targets. The EU's overall imports from non-EU countries - including logs, chips and particles, sawdust, wood waste and scrap, wood pellets, wood briquettes and similar forms - grew sharply between 2005 and 2015. The quantities increased by approximately 270 % to 14 million tonnes, while their value increased by 635 % to 1542 million EUR. The overall price of these imports went from 55 Euro per tonne to 110 Euro per tonne in the same period.

The role of wood pellets in generating bioenergy is important. Pellets and agglomerates are currently the most economical way of converting biomass into fuel and are a fast-growing source of energy in Europe. They can be used for electricity production or directly for combustion in residential and commercial heating.

According to the official UNECE/FAO data released in Autumn 2017, in 2016 global production of pellets grew by 6% compared with 2015 to 29.1 million tonnes.

The table below shows the 20 largest world producers, importers and exporters of pellets.

Table 3.17 World largest producers, exporters and importers of pellets, 2016

Production		Exports		Imports	
United States of America	6.393.000	United States of America	4.709.000	United Kingdom	7.136.212
Canada	2.800.000	Canada	2.373.109	Denmark	2.053.000
Germany	1.932.000	Latvia	1.612.344	Republic of Korea	1.716.641
Sweden	1.660.000	Viet Nam	1.353.606	Italy	1.663.820
Latvia	1.513.222	Russian Federation	1.076.000	Belgium	906.477
Viet Nam	1.350.000	Estonia	944.027	Germany	435.000
Estonia	1.191.009	Austria	606.318	Austria	378.544
France	1.150.000	Portugal	481.902	Japan	346.855
Austria	1.071.000	Germany	367.000	Sweden	267.977
Portugal	1.055.000	Lithuania	307.656	France	247.942
Russian Federation	1.013.000	Czechia	307.247	Slovenia	202.022
Poland	780.000	Malaysia	296.183	Latvia	195.677
Romania	700.000	Romania	261.106	United States of America	172.000
China	485.000	Poland	256.846	Netherlands	125.700
Spain	428.133	Croatia	235.925	Lithuania	85.886
Italy	400.000	Sweden	228.316	China	82.394
Belgium	390.000	Denmark	215.000	Switzerland	67.012
Ukraine	390.000	France	191.935	Portugal	63.445
United Kingdom	357.393	Ukraine	163.800	Poland	61.810
Czechia	330.000	Netherlands	150.300	Ireland	60.400

Source: UNECE/FAO 2017 and EOS re-elaboration

2 The UNECE/FAO Forestry and Timber Section, in collaboration with the International Energy Agency (IEA), the Food and Agriculture Organization (FAO) and the European Commission (EC) decided in June 2006 to develop and launch a Joint Wood Energy Inquiry. This enquiry aims to improve knowledge and understanding of wood energy consumption and tries to shed light on the potential and future perspective of wood energy in the region.

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The US accounts for 22% of global production (6.4 million tonnes, - 1 million tonnes vs 2015). Canada surpassed Germany in 2016 as the second largest global producer (+900,000 tonnes vs 2015). Germany was the third largest producer with slightly less than two million tonnes (production somewhat lower than 2015). Sweden remained in place number four with a stable production. Europe and North America remain the two most important regions in terms of production; however, production in Vietnam grew again by 30% in 2016 (the same feat was achieved in 2015). Production in the Baltic States of Latvia and Estonia remained high, though a slight decline was observed in Latvia, while a slight growth was observed in Estonia.

The US remained the largest exporter, in 2016, accounting for 27% of global exports (4.7 million tonnes, +3% vs 2015); US south-eastern states are the main export area and they send most of their shipments to large European importers, particularly the UK. The second largest exporter remains Canada, which, with 2.4 million tonnes exported, has seen its exports rise by over a third compared with 2015. Latvia remains the third largest exporter, followed by Russia and Estonia. As far as imports are concerned, the UK retains the lion share of pellets imports in 2015 as it accounts for 43% of global imports with 7.1 million metric tonnes, which represents a sizable increase compared with the previous year (+9%); other very relevant importers remain Denmark, Italy, and the Republic all Korea. While imports to Denmark and Italy were stable, South Korea imports increased by almost 17%. The geographical consumption patterns of pellets are heavily impacted by their use. When it comes to industrial pellets, the EU accounts for 86% of total global use, while when it comes to heating pellets, the EU accounts for 70% of global use, and North America for 21%.

According to the Wood Pellet Association of Canada, pellet heating markets have been challenged in recent years by low alternative heating fuel costs (oil and gas prices) and warmer than average winters in North America and Europe. FutureMetrics expects that a combination of higher oil prices and de-carbonization policies will return demand growth to trend in the 2020s.

For the last several years, the industrial wood pellet sector was as large as the heating pellet sector and is expected to become significantly larger over the next decade.

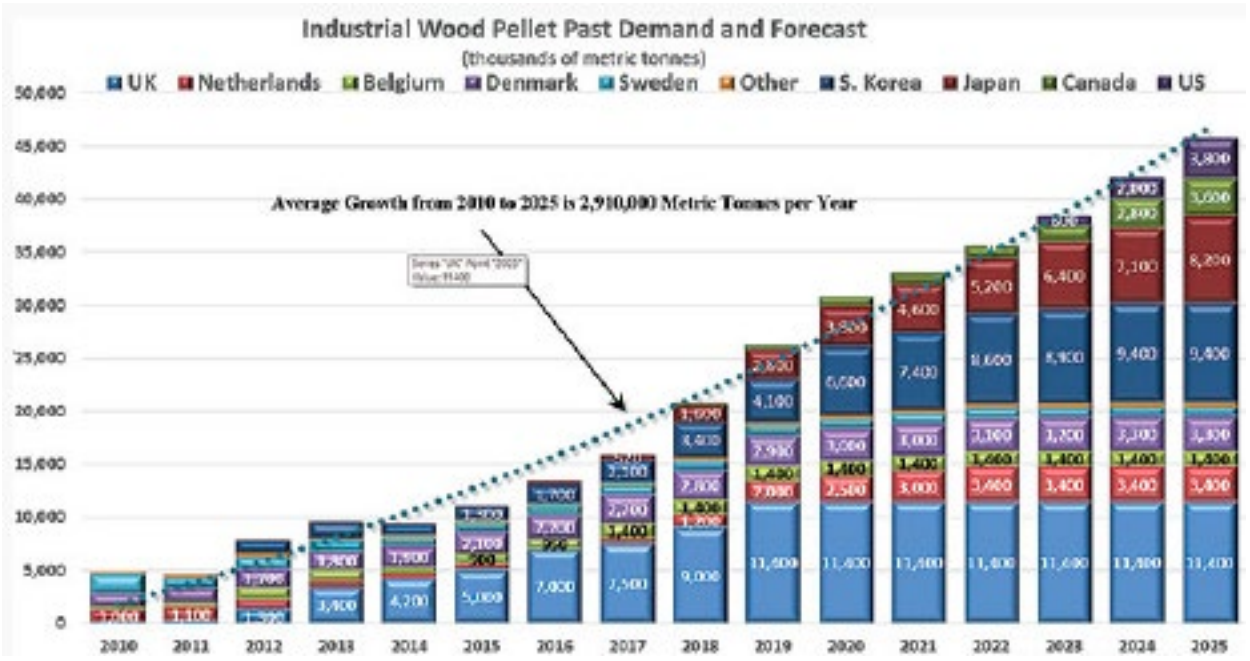
The industrial wood pellet market is driven by carbon emissions mitigation and renewable generation policies. Industrial wood pellets are a low carbon renewable fuel that easily substitutes for coal in large utility power stations (*Canadian Biomass Magazine, 2018*).

According to the Consultancy Hawkins Wright, 2017 was a year of change in the global wood pellet markets, heralding the start of a shift in fortunes for many market participants following the overcapacity and rock-bottom prices which characterised 2016. 2018 might turn out to be more dynamic, with rapidly increasing demand in Asia drawing ever-more attention from both wood pellet suppliers and end users. Research from Hawkins Wright's Outlook for Pellets report shows that global wood pellet demand (for both industrial and heating purposes) increased by 3.7 million tonnes in 2017. This +13% year-on-year growth compares to the +6% rise in demand seen in 2016 and illustrates the foundation on which fortunes in the market have begun to turn around. The bulk of this increase is attributable to industrial users in the UK and Asian power sectors, which together accounted for 2.9 million tonnes of extra demand in 2017, an increase of +23%. Such figures dwarf the rise in demand for heating pellets, which grew by a comparatively modest +5% in 2017.

This trend of rapidly increasing industrial demand in Asia may turn out to be the defining feature of the market from 2018 onwards. According to Hawkins Wright, this will be supported by a pipeline of new biomass power projects in Japan which is even larger than that in Korea, suggesting that industrial demand in Asia could rival that in Europe by the mid-2020s (Hawkins Wright, 2018).

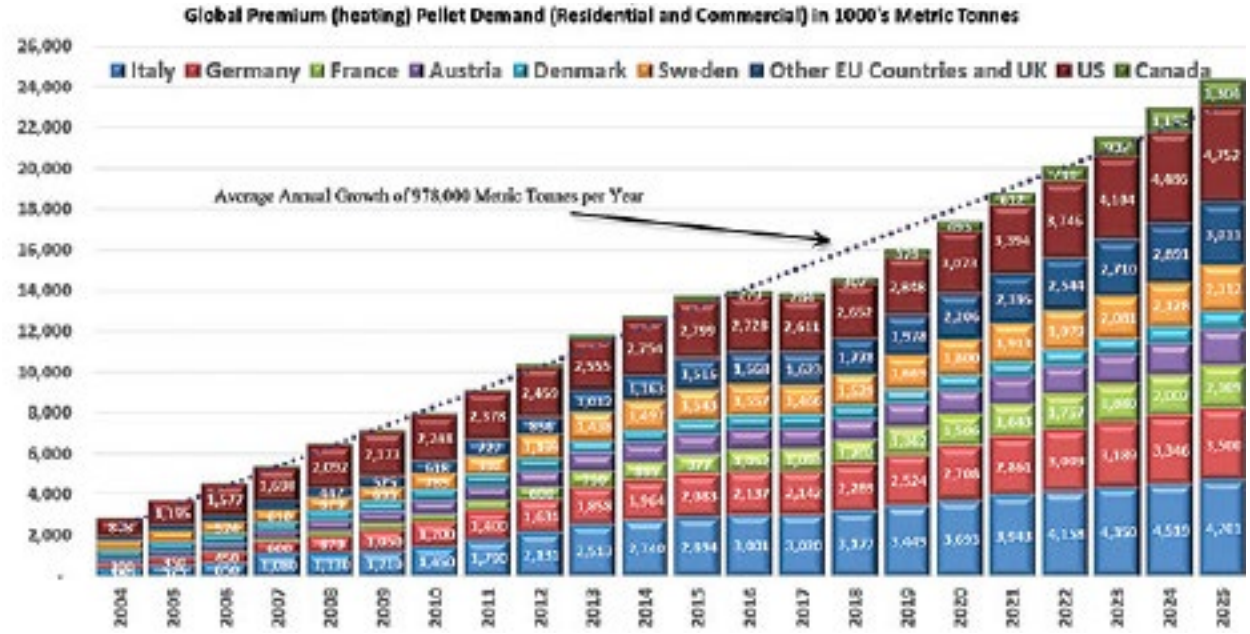
The two figures on the next page, taken from Figure Metrics, analyse the global demand for pellets.

Figure 3.3: Industrial Wood Pellet Demand



Source: Analysis by Future Metrics

Figure 3.4: Global Premium (heating) Pellet Demand



Source: Analysis by Future Metrics

Considerations on Forest biomass:

In May 2017 the European Commission published the Study titled "*Sustainable and optimal use of biomass for energy in the EU beyond 2020*". The report describes the current biomass uses and reviews current and future biomass supply potentials from EU feedstocks and extra-EU imports aiming at designing plausible biomass supply scenarios to 2030.

The Study (Annex) is available at the following link: https://ec.europa.eu/energy/sites/ener/files/documents/biosustain_annexes_final.pdf

Reported below, please find copy of the Executive Summary on forest biomass.

Disclaimer: The information and views set out in this summary are those of the authors and do not necessarily reflect the official opinion of the European Organisation of the Sawmill Industry.

(Extract of the Executive Summary on "Sustainable and optimal use of biomass for energy in the EU beyond 2020"). The total forest area is estimated at 4 033 Mha whereof almost 200 Mha or five percent are in the geographical area of Europe without Russia. The forest cover in Europe is slightly higher (34%) than in the world (31%). The growing stock (the living tree component of the standing volume) worldwide is 527,203 M m^3 whereof 61% of growing stock or 321,000 M m^3 belong to commercial species.

Forest biomass can be divided into biomass from primary forest products (stemwood, other industrial roundwood), primary forest residues (logging residues), secondary forest residues (wood processing industrial residues, like sawdust, bark and black liquor) and, wood wastes (construction and demolition wood, post-consumer wood).

The total growing stock of forest biomass in the EU is estimated around 21,000 Mm^3 solid wood equivalent (swe) (or 4,400 Mtoe), with a theoretical annual increment of total biomass of 1,277 M m^3 swe overbark (268 Mtoe) in the EU. According to projections with EFISCEN, the potential is expected to decrease by 1.8% to 1,254 M m^3 in 2030, but in general remains rather stable.

Various technical, environmental and social constraints and conditions reduce the total achievable supply potential for all uses (energy and materials) to about 710 Mm^3 swe.

Total theoretically available forest biomass in the EU28:

	in Mtoe	in PJ	in M m^3	in %
Hardwood	41.8	1749	198	15.9
Softwood	80.4	3365	382	30.7
Residues	127.7	5350	607	48.7
Bark	12.3	514	58	4.7
Total	262.1	10978	1246	100.0

Total material demand of primary forest products and residues is projected to increase from 310 Mm^3 in 2010 to 365 Mm^3 in 2030. As a consequence, 450 to 550 Mm^3 swe are available for energy uses, depending on the scenario (Restricted, Reference, Resource). At least 350 Mm^3 are already used for bioenergy in 2010. Thus, the additional potential for bioenergy use lies roughly between 100 to 200 Mm^3 in the period 2020 - 2030, mostly in the form of forest residues. However, mobilisation of these depends very much on technical solutions, because of the actual technical focus on the stem and high cost of manual collection. Furthermore, there can be quite high environmental restrictions on the use of residues. The

environmental effects of residue utilization are discussed controversially in relation the extractions of nutrients and deadwood which may be solved in accordance to forest stands.

The three supply scenarios Restricted, Reference and Resource, assess different strategies of forest biomass mobilisation and the associated corridor of sustainable biomass supply.
Coniferous stemwood (softwood) is almost completely used for material uses, leaving between 1.0 Mm^3 (Restricted) and 44 Mm^3 (Resource) available for energy in 2030.
Non coniferous stemwood (hardwood) is technically available (60-110 Mm^3), however, the mobilisation of high value assortments for energy use is likely to be problematic, because prices for high-grade hardwood are above the resource price level of biomass plants.
Primary forest residues are the largest reserve for woody biomass for energy (29 – 265 Mm^3).
Bark is harvested with stems and its potential is, therefore, directly connected with mobilisation of stemwood (42-49 Mm^3).
Landscape care wood has an interesting potential especially for communities who are often the owner of such resource. However, a large proportion is garden wood, often used by households as firewood. Post-consumer wood is a significant resource as well (45 Mm^3 in 2010, 26 Mm^3 in 2030). In countries with good collection systems, it is already widely used, while in other countries it is not yet available. Secondary forest residues, like black liquor is already completely used for energy today or like sawmill residues to some extend for energy, but mainly for material uses with 67 Mm^3 (82%) in 2010 increasing to 82 Mm^3 (88%) in 2030.

Secondary forest residues:
Industrial residues are sawmill by-products, other wood residues from wood processing and black liquor from chemical pulp production. Thus, the availability of these by-products depends totally on the development of wood and paper industries. The current developments show that wood industry will grow less than in the in the period 1990 to 2007. The amount of residues is not equal to market availability. Pellet producers are to a large proportion sawmill industries. The decreasing relevance of retailors may be explained with the higher margins which can be earned with sawmill by-products. Black liquor for example is more or less fully used by the pulp industry. Other industrial residues are quite often reused in the production process (particle board) or in wood industry owned power plants or for heat production.The availability of industrial wood residues depends completely on the production of traditional wood industry. All industrial residues add up to 17.3% of the wood potential in the year 2010. Wood and paper industries may evolve to bio-refineries, most likely using 100% of the raw wood, without being a source of available residues themselves. Thus, the availability of industrial wood residues may lose market shares.

Writers of the “Sustainable and optimal use of biomass for energy in the EU beyond 2020”:
Ric Hoefnagels, Ingeborg Kluts, Martin Junginger, Lotte Visser (Copernicus Institute - Utrecht University), Gustav Resch (Vienna University of Technology, Energy Economics Group)
Udo Mantau (INFRO), Luc Pelkmans, Nathalie Devriendt (VITO NV).

Special Focus: Sawmilling industry in Poland

Poland is one of the European countries with a high forest potential. In terms of forest area it is sixth in the European Union, in terms of raw material resources fourth, and in terms of wood removals fifth. This has a strong influence on the wood processing industries, closely related to forestry, in terms of their development and competitiveness not only on domestic market, but also on international markets.

The wood processing industries are important for the development of the entire Polish economy. The wood industry and its branches[1] generate 0.6% of gross domestic product in Poland (2016), manufacture 2.8% of total production of industry (3.3% of manufacturing) and create 2.7% of industry's gross added value (3.6% of manufacturing). Those branches are made up of more than 32 thou. companies[2] (2017), of which almost 93% employ less than 10 persons, and little more than 1% 50 and more persons. The wood industry accounts for 2.8% of sold production of the entire Polish industry and for 3.2% of sold production of manufacturing. Recently employment in the wood industry has grown systematically – up to 110 thou. people in 2016 and, according to the estimates, should reach 113-115 thou. in 2017. This is 4% of average employment in the entire industry and 4.6% in manufacturing.

General characteristics of the sawmilling industry in Poland

The sawmilling industry[3], being between forestry with its wood resources and the industries manufacturing final wood products (further processed, with a high added value), is especially important for the Polish wood industry. The situation as well as technical and technological and organisational development of the sawmilling industry, which operates at the beginning of the "wood processing chain", largely determines the trends of the entire wood industry, including rational use of available raw material resources and efficient use of manufactured materials.

The Polish sawmilling industry is a very dispersed industry, composed of approximately 9.8 thou. business entities, i.e. 31% of all wood industry companies. Those are mostly small and very small companies (92%) employing less than 10 persons, frequently family businesses, sometimes solely service companies or operating periodically. Only 125 companies employ more than 49 persons, and 11 companies 250 and more persons. The sawmilling industry manufactures approximately 21% of sold production of the entire Polish wood industry. In 2016 it amounted to € 1.7 bn, and the estimated value for 2017 exceeded € 1.8 bn. Approximately 84% of sold production was manufactured by companies employing more than 9 persons (fig. 1).

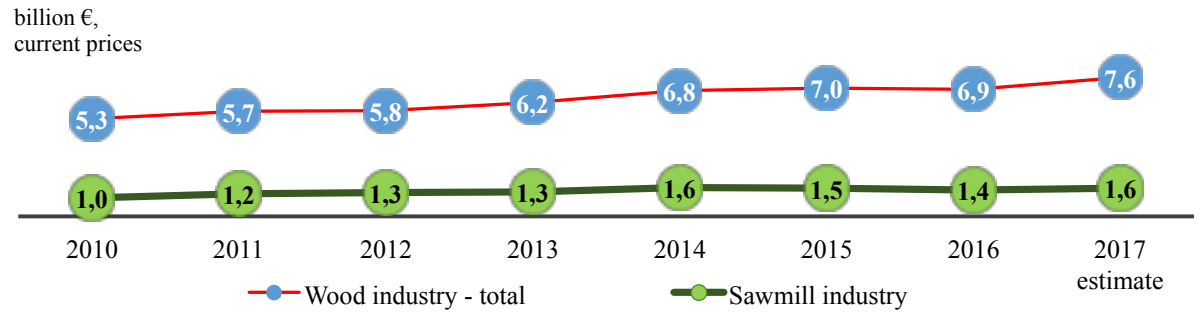
In the period 2010-2017 sold production of the sawmilling industry in companies employing more than 9 persons increased by approximately 54% (in current prices, in €). Approximately 16% of sold production value comes from small and very small companies employing less than 10 persons, and 44% from sawmilling companies employing more than 49 persons.

1 Without the furniture industry and the pulp and paper industry and the further processing of paper (acc. to Statistical Classification of Economic Activities in the European Community (NACE) 16 „Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials").

2 Acc. to the National Official Register of Business Entities REGON kept by the Central Statistical Office (CSO).

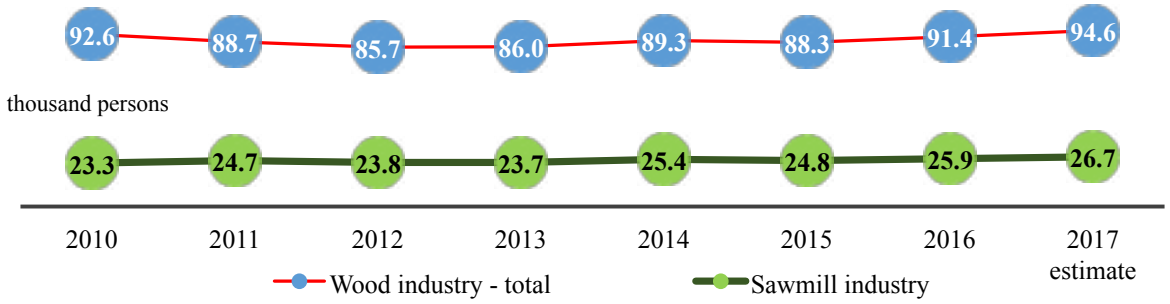
3 NACE 16.1 „Sawmilling and planing of wood".

Fig. 1. Sold production of the sawmilling industry in Poland in the years 2010-2017



Data concern economic entities employing more than 9 persons.
Source: CSO, Wood Technology Institute.

Fig. 2. Average employment in the sawmilling industry in Poland in the years 2010-2017



Data concern economic entities employing more than 9 persons.
Source: CSO, Wood Technology Institute.

Recently employment in the sawmilling industry has averaged 32-34 thou. persons, approximately 30% of all the employed in the Polish wood industry. More than 78% of the employed worked for companies employing 10 and more persons, and 42% for companies employing more than 49 persons (fig. 2).

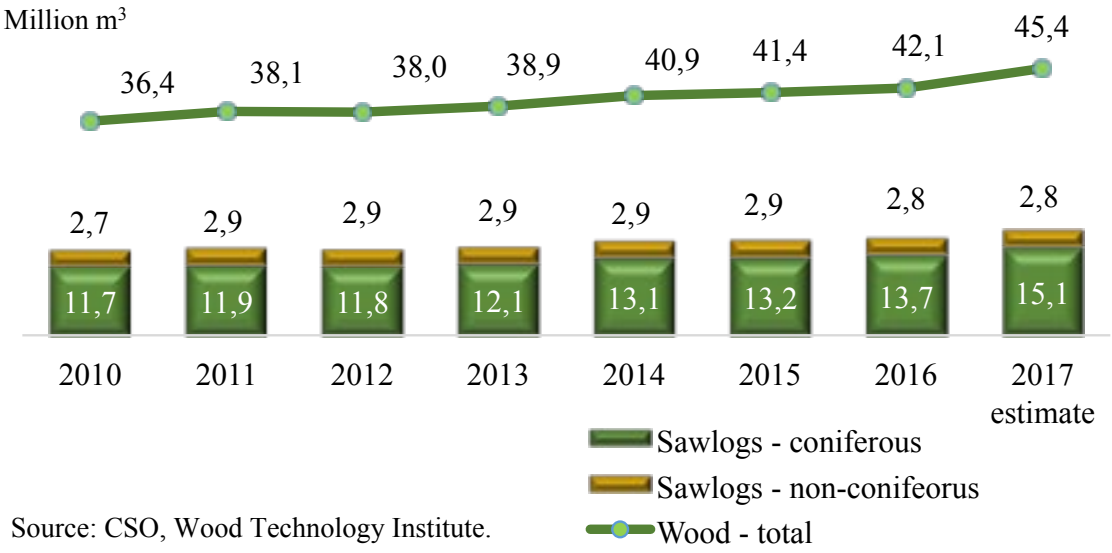
In the period 2010-2017 average employment in the sawmilling industry in the group of companies employing more than 9 persons increased more than 14%.

Sawmilling industry and the raw wood material market in Poland

In Poland the activity of the wood industry, especially of the sawmilling industry, is largely determined by domestic resources of raw wood material, its possible removals (while the principles of sustainable development of forestry are observed and forests keep maintaining all their functions, i.e. productive, environmental and social, now and in the future) and its quality and size. Poland's wood resources are one of the biggest in Europe (almost gross 2.6 bn m^3 of merchantable bole in 2016; gross 277 m^3 of merchantable bole per 1 hectare of forest area). This enables foresters to continuously increase wood removals from forest – from 35.5 m m^3 in 2010 to 40.9 m m^3 in 2016 and, according to the estimates, to 44.1 m m^3 in 2017[4]. In the period 2010-2017 removals increased from

4 The increase in removals resulted to some extent from the necessity of putting into use at least part of calamity wood (windfalls) resulting from the hurricane that passed over Poland in August 2017. According to the estimates the windfalls amount to approximately 10 m m3 of wood (25% of annual removals), which may take even two years to collect. Most of it, however, will be lower quality wood unsuitable for sawmill processing.

Fig. 3. Wood removals in Poland in the years 2010-2017 (from forest and afforested areas)



Source: CSO, Wood Technology Institute.

Table 1. Raw wood material removals by assortment in 2016 in Poland

Assortment[1]	Wood removals		
	from forest	from afforested areas	in total
	thou. m³		
Wood in total	40901	1236	**42137**
Merchantable bole	39130	1236	**40366**
• coniferous merchantable bole:	30078	354	**30432**
- large-size wood for general purposes (sawlogs)	13502	184	**13686**
- large-size wood for special purposes (veneer logs, peeler logs)	87		**87**
- medium-size logwood (pit wood)	269		**269**
- medium-size wood for industrial processing (pulpwood and other wood for industrial processing)	14554	85	**14639**
- medium-size fuelwood	1666	85	**1751**
• non-coniferous merchantable bole:	9052	882	**9934**
- large-size wood for general purposes (sawlogs)	2512	305	**2817**
- large-size wood for special purposes (veneer logs, peeler logs)	206		**206**
- medium-size wood for industrial processing (pulpwood and other wood for industrial processing)	4468	289	**4757**
- medium-size fuelwood	1866	288	**2154**
Small-size wood:	1771		**1771**
for industrial processing	382		**382**
fuelwood	1389		**1389**

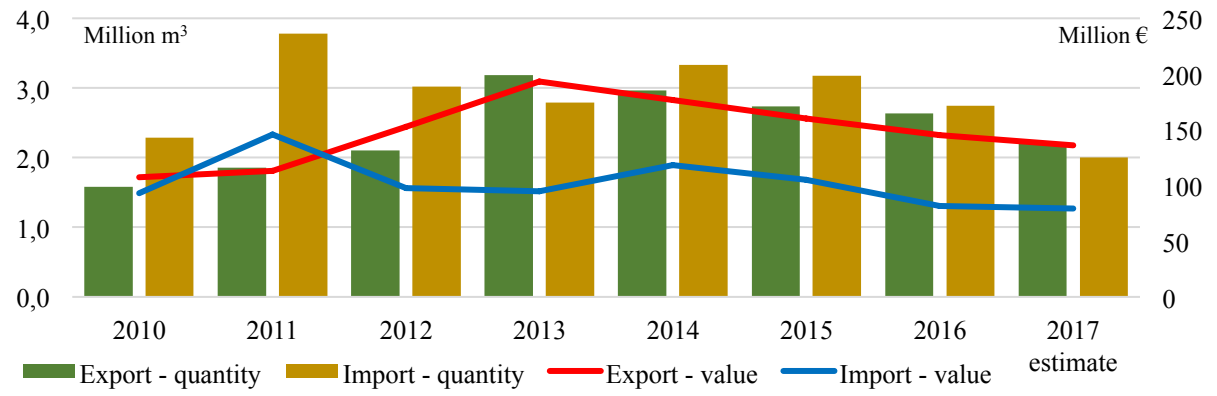
1 Merchantable bole – roundwood with a narrower end diameter of above 5 cm (without bark) or above 7 cm (in bark).
Large-size wood – roundwood without bark with a minimum diameter at the narrower end of 14 cm (coniferous) or 22 cm (non-coniferous).
Medium-size wood – roundwood without bark with a minimum diameter at the narrower end of 5 cm and a maximum diameter at butt end of up to 24 cm without bark.
Small-size wood – roundwood with a butt end diameter (at the butt end) of up to 5 cm without bark or 7 cm in bark, measured in pieces collectively or in stacks.

Source: CSO

36.4 m m³ to 45.4 m m³, including wood from afforested areas[5] (fig. 3). Raw wood material harvested in Poland is dominated by coniferous wood (75%). Medium-size wood accounts for 56% of the volume of wood harvested

5 From production and protective planting of trees and shrubs in public and private areas outside forests and green areas in cities and villages (in recent years wood from afforested areas amounted to less than 3% of the volume of raw material from forests).

Fig. 4. Foreign trade in industrial wood in Poland in the years 2010-2017



Source: CSO, The Polish Economic Chamber of Wood Industry.

from forest and afforested areas, whereas large-size wood accounts for approximately 40% of harvested raw material and small-size wood for 4% (table 1). More than 87% of harvested wood is intended for production purposes (36.8 m m³ in 2016).

The sawmilling industry primarily processes so-called large-size wood for general purposes (however, it also uses medium-size wood – logs and wood for industrial processing). 13.7 m m³ of coniferous sawlogs (including 0.2 m m³ from afforested areas) and 2.8 m m³ of non-coniferous sawlogs (including 0.3 m m³ from afforested areas) were harvested in Poland in 2016. It is estimated that in 2017 the volumes were 15.1 m m³ and 2.8 m m³, respectively. Removals of sawlogs demonstrate an upward trend but this is true mainly for coniferous wood. In the period 2010-2017 removals of coniferous sawlogs increased 28% and of non-coniferous less than 4%.

The Polish market in wood is mainly supplied by the State Forests National Forest Holding (SF NFH), which manages approximately 96% of the raw material harvested (from forests) and which, as a dominant wood producer in Poland, influences the wood market two ways: through determination of raw material supply and through setting wood sale prices. SF NFH operates on more than ¼ of Poland's area and concentrates 79% of wood resources.

The wood harvested in Polish forests is primarily used by national industry. In 2016 approximately 7% of harvested industrial wood, i.e. 2.6 m m³ (€ 145 m), was exported; however, according to the estimates, in 2017 exports of this wood might have dropped to 2.2 m m³. 88% of the exports is raw coniferous wood material. In the period 2010-2017 supplies of industrial raw material to foreign markets increased 39% (fig. 4). Polish wood is mainly exported to the European Union countries – coniferous to Germany (in 2017 68% of its estimated total volume), and non-coniferous to Germany (35%), Sweden (23%), and Slovakia (19%). This shows that foreign demand for Polish wood is considerable.

Domestic resources of industrial wood are supplemented by imports. In recent years imports exceeded exports and in 2016 its volume amounted to 2.7 m m³ (€ 82 m), of which 53% was non-coniferous wood. Nevertheless, according to the estimates, imports dropped to 2 m m³ in 2017. The imports of industrial wood encompass primarily supplies of relatively cheap wood from Eastern Europe, mainly from Belarus (in 2017 59% of estimated imports of industrial coniferous wood and 71% of non-coniferous) and Latvia (7% of the imports of coniferous wood and 16% of non-coniferous).

More than half of exported industrial wood (55% in 2016) is sawlogs (54% of coniferous and 61% of non-coniferous). According to the estimates, in the period 2015-2016 Poland exported 1.3 m m³ of coniferous sawlogs and less than 0.2 m m³ of non-coniferous sawlogs annually (table 2).

Table 2. Sawlogs exports and imports in Poland in the years 2015-2017

Sawlogs	Exports						Imports					
	thou. m³			m €			thou. m³			m €		
	2015	2016	2017 estimate	2015	2016	2017 estimate	2015	2016	2017 estimate	2015	2016	2017 estimate
- coniferous	1284	1255	867	88.0	76.3	60.2	145	88	138	8.4	5.5	7.9
- non-coniferous	176	189	123	8.5	9.7	9.8	134	77	54	9.8	4.9	7.2

Approximate data based on the Combined Nomenclature classification (items: 4403.20.11/31/91, 4403.91.10, 4403.92.10, 4403.99.51); quantity – conversion from mass (tonnes) using standard conversion factors by UNECE/FAO.
Source: CSO, The Polish Economic Chamber of Wood Industry, Wood Technology Institute.

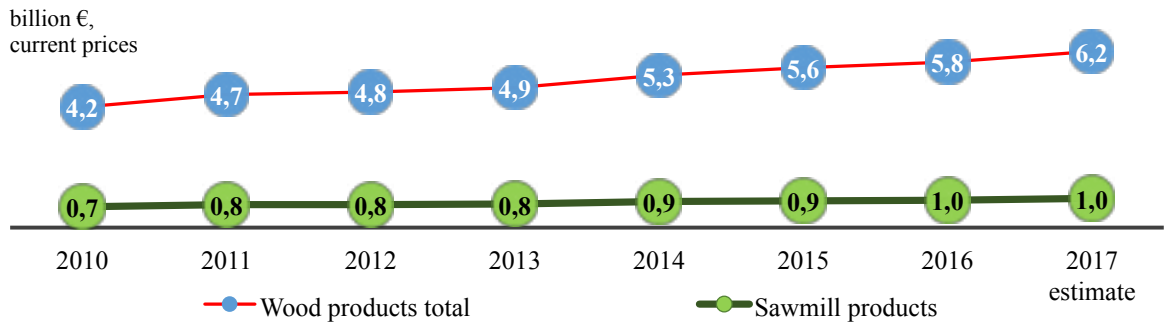
Based on the available data it can be assumed that in 2017 the exports of coniferous sawlogs amounted to 0.9 m m³ and of non-coniferous to 0.1 m m³. On the other hand, imports are relatively less important for the development of companies processing this assortment of raw material. It is mainly due to transport costs. In 2016 the imports amounted to approximately 6% of total imports of industrial wood (7% of coniferous and 5% of non-coniferous). In the period 2015-2016 Poland imported approximately 100 thou. m³ of both coniferous and non-coniferous sawlogs. It is estimated that in 2017 the imports of coniferous sawlogs amounted to 0.1 m m³ and of non-coniferous to 50 thou. m³.

Products of the sawmilling industry in Poland

Products of the sawmilling industry generate 17% of the value of sales of wood products manufactured in Poland[6]. Their sales amounted to approximately € 1 bn in 2016 and, according to the estimates, in 2017 (fig. 5). In the period 2010-2017 the sales increased 41%, while sales of wood products in total augmented 46% (in current prices, in €).

As a result of primary processing of raw wood material, the sawmilling industry produces mainly sawnwood, which is largely used (directly or indirectly by way of secondary processing) in the other wood industries and different economy sectors such as construction, mining, transport, power industry or agriculture. Nonetheless, most of sawmilling companies in Poland also produce other wood materials and products, also those with a higher added value, inter alia, veneers, flooring materials (especially floor boards, parquet and mosaic), sleepers (also tram sleepers) and wooden packaging (including primarily pallets).

Fig. 5. Value of sales of the sawmilling industry productsin Poland in the years 2010-2017



Data concern economic entities employing more than 9 persons.
Source: CSO, Wood Technology Institute.

6 Acc. to Statistical classification of products by activity (CPA): 16 "Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials" and 16.1 "Wood, sawn and planed".

Table 3. Production of major wood products in Poland in the years 2010-2017

Detailed list	2010	2011	2012	2013	2014	2015	2016	2017 estimate
Sawnwood *(thou. m³)* acc. to CSO	**4220**	**4422**	**4249**	**4321**	**4725**	**4835**	**4911**	**5260**
- coniferous	3765	3946	3796	3874	4233	4315	4352	4590
- non-coniferous	455	476	453	447	492	520	559	670
Sawnwood *(thou. m³)* – PECofWI estimate	**8050**	**8310**	**8125**	**7915**	**8540**	**8620**	**8830**	**9360**
- coniferous	6650	6800	6640	6485	7080	7220	7460	7930
- non-coniferous	1400	1510	1485	1430	1460	1400	1370	1430
Veneers *(thou. m²)*	34800	31987	26844	25081	25230	24882	22549	24350
Wooden flooring materials (excluding parquet panels) *(thou. m²)*	14365	9822	7824	7161	6546	6993	6511	7150
Parquet panels of wood for mosaic floors *(thou. m²)*	1966	1881	1802	1899	2055	2051	2007	2000
Parquet panels of wood (excluding those for mosaic floors) *(thou. m²)*	38960	44990	49381	52829	58859	60205	63908	66450
Pallets and pallet collars of wood *(thou. units)*	46424	53511	73132	83806	90024	101229	106741	122000

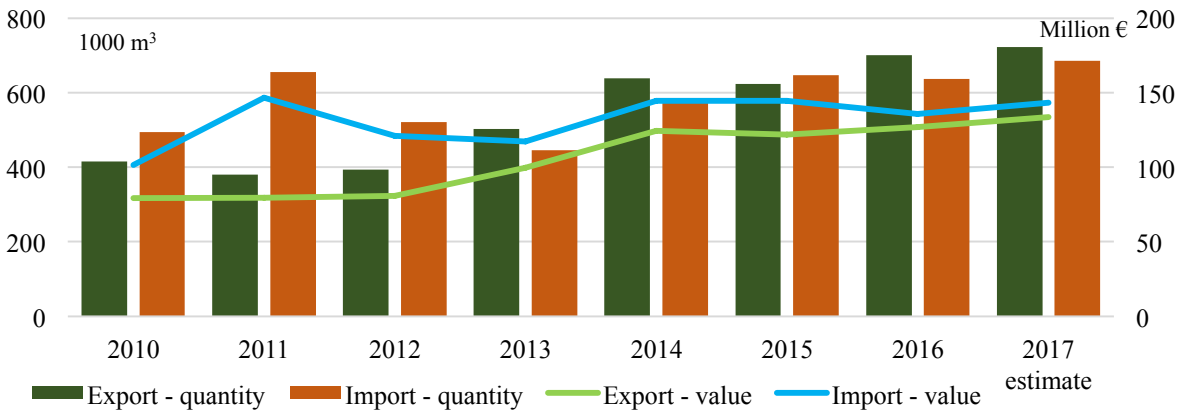
Data concern economic entities employing more than 9 persons.

Source: CSO, The Polish Economic Chamber of Wood Industry, Wood Technology Institute.

According to official reporting timber production did not exceed 5 m m³ in the period 2010-2016 in Poland (in companies employing more than 9 persons). There was a 16% increase in production in that period. The former data of the CSO suggest that 5.3 m m³ of timber was produced in 2017. Most of it was coniferous timber (89%) – table 3. It is estimated, however, that timber production is considerably higher. Based on the data concerning harvesting and sales of sawlogs and average raw material efficiency of sawlog sawing (taking into account the balance of foreign trade in sawlogs), the Polish Economic Chamber of Wood Industry (PIGPD) estimates that it was possible to produce more than 8.8 m m³ of timber (7.5 m³ of coniferous and 1.4 m m³ of non-coniferous) in 2016 in Poland and that it was approximately 10% more than in 2010. According to a forecast of the Chamber the production in 2017 should have amounted to 9.4 m m³.

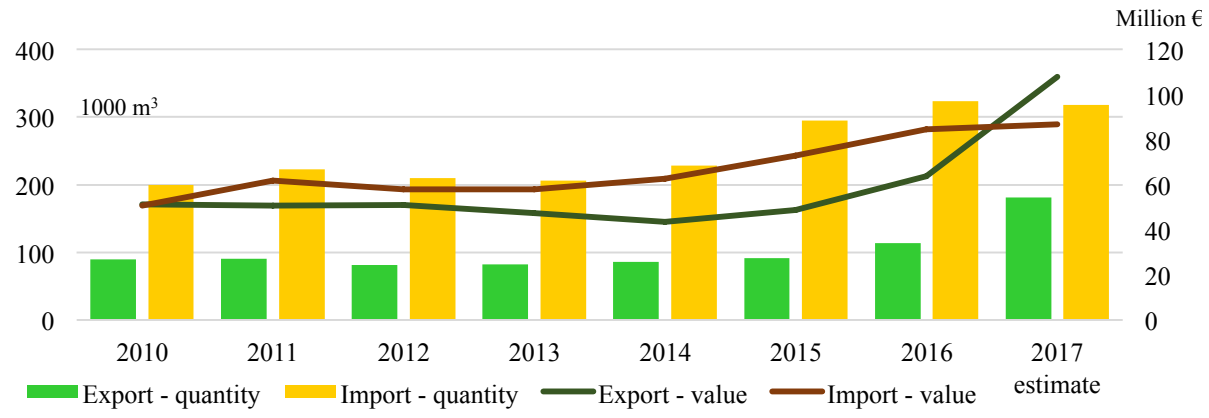
Due to limited domestic resources of special large-size wood intended for the production of, inter alia, veneers,

Fig. 6. Foreign trade in coniferous sawnwood in Poland in the years 2010-2017



Source: CSO, The Polish Economic Chamber of Wood Industry.

Fig. 7. Foreign trade in non-coniferous sawnwood (excluding tropical species) in Poland in the years 2010-2017



Source: CSO, The Polish Economic Chamber of Wood Industry.

recently there has been observed a slow downward trend in their production (despite the anticipated production increase in 2017). In the period 2010-2016 the production decreased by almost 35%. On the other hand, a high growth dynamic is observed in the production of pallets, which increased 2.6 times in the period 2010-2017. The production of flooring materials has also increased; however, a continuous growth concerns primarily the production of combined non-mosaic parquet panels (in recent years mosaic production has been at a level of approximately 2 m m^2, while the production of non-combined flooring materials decreased 50% in the period 2010-2017).

As in the case of other industries, foreign trade, and especially export, is one of the factors influencing development of the sawmilling industry. Primary export product is coniferous sawnwood (86%), which increased 74% in the period 2010-2017 and, according to the estimates, amounted to 0.7 m m^3 (€ 134 m) in 2017 – fig. 6. Sawnwood is mainly exported to the European Union countries, especially to Germany (34% of estimated total exports in 2017), Italy (17%), and France (10%). Domestic coniferous sawnwood offer is supplemented by imports, which amounted to 0.6 m m^3 in 2016 and probably to 0.7 m m^3 (€ 143 m) in 2017. Coniferous sawnwood was imported mainly from Eastern Europe, i.e. Belarus (23% of estimated total imports of that material in 2017) and Ukraine (17%), but also from Sweden (16%) and Germany (14%).

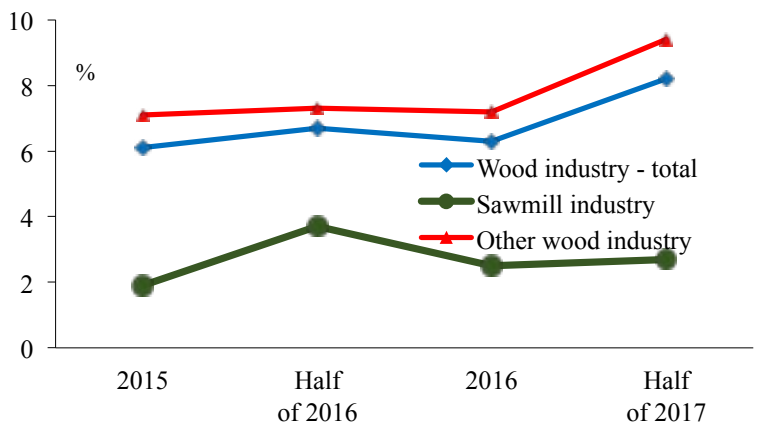
Poland also exported 0.1 m m^3 of non-coniferous sawnwood in 2016, and, according to the estimates, 0.2 m m^3 (€ 108 m) in 2017, which meant a twofold increase of its exports in the period 2010-2017 (fig. 7). Non-coniferous sawnwood is exported to China (20% of its estimated total exports in 2017), Lithuania (18%), and Germany (13%). Exports of non-coniferous sawnwood is lower than its imports. In the period 2016-2017 Poland imported 0.3 m m^3 of non-coniferous sawnwood, which was approximately 60% more than in 2010. It was imported from Ukraine (43% of total non-coniferous sawnwood imports), Germany (16%), and Russia (12%).

Economic situation of the sawmilling industry in Poland

Economic and financial results of the wood industry, especially of the wood-based panel industry and the builder's carpentry and joinery industry, are generally relatively better than the results of industry in general or the results of manufacturing.

Nonetheless, in the sawmilling industry the relations between incurred costs and gained profits are less favourable than in other wood industries, primarily due to its huge dependence on the raw wood material prices. In the period 2015-2017 net profitability in the

Fig. 8. Profitability of net sales in the sawmilling industry in Poland in the years 2015-2017



Data concern economic entities employing more than 9 people.
Source: CSO.

sawmilling industry oscillated between 1.9% and 3.7% (it reached 2.7% in mid 2017), while in the other wood industries it ranged from 7.1% to 9.4% on average (fig. 8). The sawmilling industry is usually the first to suffer from the problems emerging on the wood market, mainly from possible wood shortages and price increase, while prices of its products are characterised by a relatively low elasticity, i.e. an increase in wood prices is not automatically reflected in the growth of prices of the sawmilling industry products.

Wood materials in construction in Poland

Construction is potentially the largest segments of the wood market in Poland. It is both a consumer of various types of wood materials and a creator of demand for final wood products. This is possible thanks to a continuous modification of wood materials and creation of various new wood composites with the advantages of all materials used in them. Over the last few years in Poland, the most dynamic segments of the wood market are wooden windows and doors, flooring materials and structural wood products.

Wood materials are largely used in Polish construction. Most often they are used, solely or in combinations (also with non-wood materials), for the production of final wood products, which gain their functional and operational features from the wood materials. The most universal is sawnwood processed to various degrees, which is used indirectly or directly in all construction sectors, in all types of constructions, and at every stage of construction work. Materials laminated in width, thickness or length have become especially important. According to the estimates in 2016 Polish construction consumed almost 7 m m^3 of wood materials (solid and wood-based)[7].

7 Estimate by the Wood Technology Institute, Poznan, Poland.

Recently there has been vast promotion of wooden construction in Poland. It is estimated that there are more than 700 companies in Poland which erect residential buildings in various technologies based on wood as a construction material, including 400 companies building wooden frame houses, 60 assembling prefabricated houses, and 200 building log houses. It is assumed that more than 5000 wooden houses of different types are built annually in Poland, while most of them is exported, mainly to Germany, Sweden, and Norway. There also seems to be potential for the development of the market in wooden public buildings and wooden cubature buildings – few such investments have already been realised in Poland and others are planned.

Self-government in the sawmilling industry in Poland

Self-government actively supports development of the Polish wood industry and its branches, integration of wood producers and cooperation between them. This is the role of the Polish Economic Chamber of Wood Industry (PIGPD), which is one of the biggest Polish organisations of economic self-government with its registered seat in Poznan and operating on the area of all Poland. The Chamber gathers, on voluntary basis, entities active in the wood processing business; however, its members are dominated by timber producers. The Chamber's activities are diverse – from those aimed at assuring stability of wood supply to wood companies and supporting introduction of modern solutions and technologies of wood processing to those supporting sale of manufactured products and gaining new markets. Moreover, the Chamber:

- supports rational processing of wood from Polish forests by cooperating with the state authorities in this field, especially with the ministry of economy and the ministry of the environment,
- fosters and supports innovative development of wood companies through organisation of conferences, symposia, and study visits,
- takes care of the wood industry image and fosters the growth of social awareness of the industry's role in economy and its importance for the economy and internationally,
- collects and disseminates marketing information, including statistical data and information on the prices of roundwood and wood products in Poland and abroad,
- creates modern mechanisms facilitating trade and access to information bases using the Internet (e.g. an auction portal www.e-handeldrewnem.pl),
- cooperates with other branch organisations to solve emerging problems,
- cooperates with the sphere of science and research by initiating and supporting research for the growth of innovativeness and competitiveness of wood companies,
- supports economic initiatives of wood companies and helps solve problems connected with their operation on the market.

R&D for the sawmilling industry in Poland

In Poland R&D facilities for the wood industry and its branches are higher education institutions and R&D institutions which have long traditions of creating innovations and standards of high quality production. Recently modern R&D units operating within industrial companies (laboratories, construction offices and construction-technological offices, study and project offices etc.) have also developed dynamically. Research and initiatives facilitating companies are also carried out in newly created centres of innovation or technology transfer, as well as in clusters.

For many years the Wood Technology Institute in Poznan has been an important creator of innovation in the wood industry. The Institute is the only scientific-research institution in Poland which deals in a comprehensive manner with issues of wood processing, its application and creation of new composites based on wood. The Institute carries out research aimed at production of modern materials and improvement of production technologies and processing techniques, which leads to high international competitiveness of the Polish wood industry (www.itd.poznan.pl).

The accredited laboratory at the Institute offers a broad spectrum of research for the sawmilling industry. The research concerns, inter alia, structural timber, laminated timber, wood-based panels, floors (including sports floors), windows and doors. The laboratory also conducts research and consults on the marketing and use of construction wood products in accordance with national and foreign standards.

The Certification Centre of Wood Industry Products at the Institute certifies wood industry products and furniture as regards their conformity with the requirements of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national and European standards as well as technical approvals, issues certificates for woodworking machines, assesses the stability of functional properties of construction products, and conducts certification in the field of the Regulation of the European Parliament and of the Council concerning construction products (structural products of solid wood, wood-based panels, flooring materials, materials for wall and ceiling finishing).

Producers of wooden packaging, especially pallets, may find it useful that the Institute is a competent institution to confirm the fact that they comply with phytosanitary requirements effective in international trade (which are set to eliminate the risk of spreading of quarantine organisms), which is a condition to export Polish goods at a global scale and significantly increases export opportunities.

And last but not least the Industry Economics Department continuously monitors the market in wood and products of its processing to meet the needs of national and international statistics, and also prepares wood market analyses as well as short- and long-term forecasts and strategies for the development of the forestry-wood sector.

EOS gives a special thanks to the Polish Economic Chamber of Wood Industry, Poland, Poznan and to Prof. dr hab. Ewa Ratajczak, Wood Technology Institute, Poland, Poznan who kindly wrote this Special Focus.

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4. Main results from the EOS market survey – April 2018

4.1 General information about the timber markets

The table below provides a summary overview of the sawnwood markets over the last few years in the EOS countries (big consumer countries such as Italy and the United Kingdom, which are not EOS members, are also included). For a more detailed country-by-country analysis, see section 4.5.

Country	Year	Production (1.000 m³)		Imports (1.000 m³)		Exports (1.000 m³)		Consumption (1.000 m³)	
		softwood	hardwood	softwood	hardwood	softwood	hardwood	softwood	hardwood
Austria	2012	8.793	159	1.721	207	5.036	132	5.478	236
	2013	8.385	149	1.736	166	4.932	113	5.189	202
	2014	8.326	134	1.614	145	4.884	127	5.056	152
	2015	8.605	126	1.641	155	5.059	124	5.268	158
	2016	9.250	153	1.807	181	5.301	133	5.756	201
	2017	9.480	172	1.750	174	5.450	157	5.780	190
	2018	9.670	180	1.770	180	5.550	150	5.890	210
Belgium	2012	1.530	300	1.400	420	900	240	2.030	480
	2013	1.460	285	1.300	400	880	240	1.880	445
	2014	1.520	285	1.330	380	920	230	1.930	435
	2015	1.500	170	1.300	356	900	315	1.900	211
	2016	1.400	170	1.300	420	950	360	1.750	230
	2017	1.350	170	1.400	420	900	360	1.850	230
	2018	1.380	170	1.370	420	900	360	1.850	230
Denmark	2012	500	125	1.125	200	106	100	1.519	225
	2013	295	69	1.034	200	89	100	1.240	225
	2014	290	73	1.285	200	105	100	1.470	225
	2015	352	76	1.400	210	111	100	1.641	186
	2016	310	84	1.500	210	120	100	1.690	194
	2017	320	85	1.400	200	120	100	1.600	185
	2018	320	85	1.500	200	120	100	1.700	185
Germany	2012	20.032	983	4.077	427	6.430	575	17.678	835
	2013	20.428	1.031	4.243	401	6.512	639	18.159	793
	2014	20.757	1.015	4.348	418	6.935	692	18.170	741
	2015	20.433	1.032	4.579	411	6.529	697	18.483	746
	2016	21.109	1.068	4.915	393	7.295	705	18.729	756
	2017	22.000	1.080	4.994	393	7.828	760	19.166	713
	2018	22.500	1.100	5.000	400	8.000	775	19.500	725
Finland	2012	9.300	50	500	27	6.500	13	3.300	63
	2013	10.400	50	300	27	6.700	13	3.700	63
	2014	10.800	40	360	27	7.500	13	3.400	63
	2015	10.500	40	440	27	7.900	13	3.300	54
	2016	11.400	40	470	20	8.600	14	3.200	47
	2017	11.900	40	480	16	8.800	16	3.300	40
	2018	12.000	40	490	16	9.000	16	3.400	40

Country	Year	Production (l.000 m³)		Imports (l.000 m³)		Exports (l.000 m³)		Consumption (l.000 m³)	
		softwood	hardwood	softwood	hardwood	softwood	hardwood	softwood	hardwood
France	2012	6.750	1.430	2.400	270	507	363	8.643	1.148
	2013	6.800	1.380	2.200	243	600	380	8.400	1.243
	2014	6.360	1.542	2.200	220	600	400	7.960	1.362
	2015	6.230	1.479	2.100	200	760	430	7.570	1.249
	2016	6.400	1.500	2.100	200	770	450	7.730	1.250
	2017	6.660	1.550	2.000	200	743	480	7.917	1.270
	2018	6.900	1.560	2.100	200	750	490	8.250	1.270
Italy *	2012	850	520	4.156	612	146	99	4.860	1.033
	2013	860	500	3.936	622	120	115	4.676	1.007
	2014	910	520	3.904	593	140	135	4.674	978
	2015	920	550	3.873	601	150	154	4.643	997
	2016	950	550	3.981	591	153	238	4.778	900
	2017	970	550	4.050	525	180	213	4.840	860
	2018	950	550	4.100	600	150	237	4.900	911
Latvia	2012	2.582	570	215	15	1.954	346	843	239
	2013	2.600	659	252	9	2.069	428	783	240
	2014	2.620	717	439	21	2.258	498	801	240
	2015	2.690	810	570	30	2.440	590	820	250
	2016	2.792	690	779	29	2.739	472	832	253
	2017	2.662	596	934	28	2.746	374	850	250
	2018	2.690	600	850	30	2.640	380	900	250
Norway	2012	2.280	0	980	35	500	1	2.760	34
	2013	2.200	0	960	35	515	1	2.645	34
	2014	2.400	0	970	23	512	0	2.858	23
	2015	2.444	0	979	24	560	0	2.863	24
	2016	2.533	0	991	14	600	0	2.924	14
	2017	2.655	0	996	14	666	0	2.985	14
	2018	2.600	0	950	14	650	0	2.900	14
Romania	2012	3.390	1.758	39	32	2.475	750	954	1.040
	2013	3.762	1.756	16	68	2.607	968	1.171	856
	2014	3.500	1.700	16	29	2.296	712	1.188	918
	2015	4.317	1.795	29	29	1.759	726	2.529	1.179
	2016	3.900	1.700	283	125	1.800	800	2.383	1.025
	2017	3.600	1.600	450	25	1.600	800	2.450	825
	2018	3.600	1.600	500	25	1.550	800	2.550	825
Sweden	2012	16.100	100	100	49	11.840	11	4.500	138
	2013	16.100	90	120	40	11.700	10	4.600	120
	2014	17.660	100	150	28	12.300	9	4.800	120
	2015	18.132	100	170	28	12.820	4	5.253	124
	2016	18.011	100	160	42	13.000	19	5.555	123
	2017	18.060	100	180	39	13.110	10	5.553	129
	2018	18.060	100	180	39	13.000	10	5.400	129

Country	Year	Production (I.000 m³)		Imports (I.000 m³)		Exports (I.000 m³)		Consumption (I.000 m³)	
		softwood	hardwood	softwood	hardwood	softwood	hardwood	softwood	hardwood
Switzer-land	2012	1.079	50	344	35	190	15	1.233	70
	2013	986	58	320	35	175	15	1.131	78
	2014	1.080	65	330	35	180	15	1.230	85
	2015	1.089	76	345	50	176	15	1.258	111
	2016	1.074	79	348	55	190	17	1.232	117
	2017	1.095	80	340	60	200	18	1.235	122
	2018	1.095	80	300	60	200	18	1.235	122
United Kingdom*	2012	3.361	48	4.756	423	116	25	8.002	446
	2013	3.536	46	5.101	380	130	20	8.491	410
	2014	3.716	47	5.352	400	140	20	8.870	430
	2015	3.449	44	5.888	338	167	17	9.170	365
	2016	3.624	47	6.219	330	170	20	9.677	342
	2017	3.690	50	6.450	330	170	20	9.960	350
	2018	3.750	50	6.490	330	170	20	10.060	350
EOS TOTAL	**2012**	**76.547**	**6.093**	**21.813**	**2.752**	**36.700**	**2.670**	**61.800**	**5.987**
	2013	**77.812**	**6.073**	**21.518**	**2.626**	**37.029**	**3.042**	**62.065**	**5.716**
	2014	**79.939**	**6.238**	**22.298**	**2.519**	**38.770**	**2.951**	**62.407**	**5.772**
	2015	**80.661**	**6.298**	**23.314**	**2.459**	**39.331**	**3.185**	**64.698**	**5.654**
	2016	**82.753**	**6.181**	**24.853**	**2.610**	**41.688**	**3.328**	**66.236**	**5.452**
	2017	**84.442**	**6.073**	**25.424**	**2.424**	**42.513**	**3.308**	**67.486**	**5.178**
	2018	**85.515**	**6.115**	**25.600**	**2.514**	**42.680**	**3.356**	**68.535**	**5.261**

*Italy and the UK are not EOS Countries

4.2 Sawn softwood

4.2.1 Overview of EOS Sawn Softwood Production

Table 4.1: Overview of the EOS sawn softwood production 2013-2018 in 1.000 m³

	2013	2014	2015	2016	2017	2018 *	17/16 % var.	18/17 % var.*	Share % 2017
AT	8.385	8.326	8.605	9.250	9.480	9.670	2,5%	2,0%	11,2%
BE	1.460	1.520	1.500	1.400	1.350	1.380	-3,6%	2,2%	1,6%
CH	986	1.080	1.089	1.074	1.095	1.095	2,0%	0,0%	1,3%
DE	20.428	20.757	20.433	21.109	22.000	22.500	4,2%	2,3%	26,1%
DK	295	290	352	310	320	320	3,2%	0,0%	0,4%
FI	10.400	10.800	10.500	11.400	11.900	12.000	4,4%	0,8%	14,1%
FR	6.800	6.360	6.230	6.400	6.660	6.900	4,1%	3,6%	7,9%
IT	860	910	920	950	970	950	2,1%	-2,1%	1,1%
LV	2.600	2.620	2.690	2.792	2.662	2.690	-4,7%	1,1%	3,2%
NO	2.200	2.400	2.444	2.533	2.655	2.600	4,8%	-2,1%	3,1%
RO	3.762	3.500	4.317	3.900	3.600	3.600	-7,7%	0,0%	4,3%
SE	16.100	17.660	18.132	18.011	18.060	18.060	0,3%	0,0%	21,4%
UK	3.536	3.716	3.449	3.624	3.690	3.750	1,8%	1,6%	4,4%
EOS	**77.812**	**79.939**	**80.661**	**82.753**	**84.442**	**85.515**	**2,0%**	**1,3%**	**100%**

*Estimates

Following some challenging years in the aftermath of the global economic crisis, the recovery of the sawn softwood production continues at a moderate pace, on the back of lively construction markets in Europe. Strong demand in large importers such as the US and big Asian markets like China and Japan is contributing to positive developments in export volumes.

In these countries total production of sawn softwood increased by 2% in 2017 reaching a volume of 84.4 million m^3. The production peak in this group of countries (EOS member countries, UK, Italy) was reached in 2007 with more than 89 million m^3.

The recovery seems to continue this year at a slightly slower pace, as sawn softwood production is projected to reach 85.5 million m^3 in 2018 (+1.3%). Overall, in 2017 production developments in the EOS countries were positive with some exceptions such as Romania, Belgium and Latvia due mainly to challenges linked to the supply of logs. Denmark is also being confronted with significant exports of roundwood. Production declined a little also in Latvia, going back to levels achieved in 2013-2015.

With a production of 22 million m^3 in 2017 (+4.2% vs 2016) Germany remains the largest sawn softwood producer within the EOS community. A further half a million m^3 is expected to be added this year. Sweden ranks second with 18.1 million m^3 in 2017, slightly increasing its production. Finland remains the third largest producer with 11.9 million m^3 (+4.4% vs 2016) ahead of Austria with 9.5 million m^3 (+2.5% vs 2016). France remains the fifth largest producer with 6.6 million m^3 (+4.1% vs 2016).

Figure 4.1: Sawn softwood production volumes in the EOS member countries 2008-2018 (000 m^3)

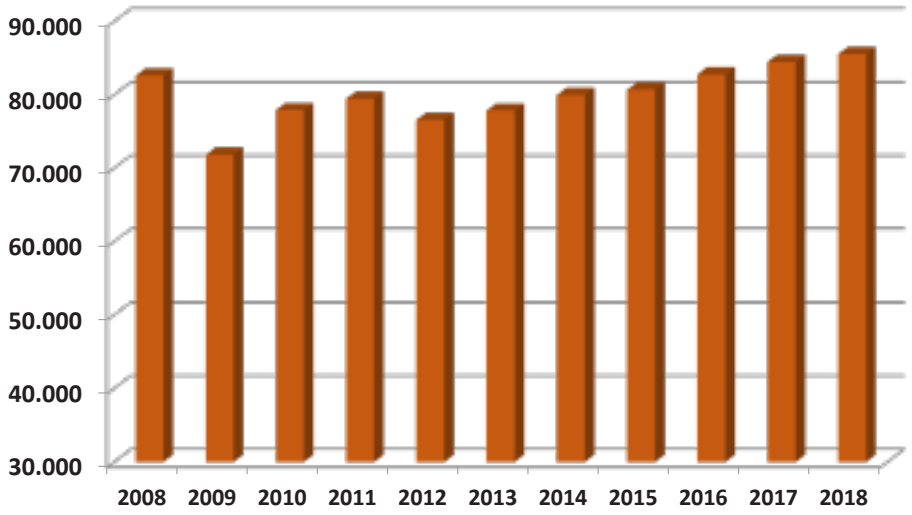
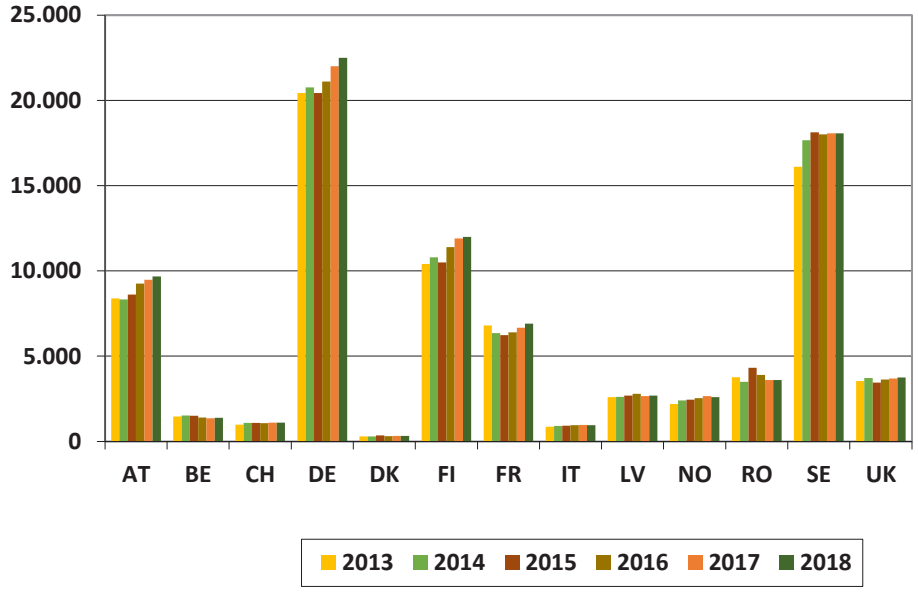


Figure: 4.2 Sawn softwood production volumes in the EOS member countries 2013-2018 (000 m^3)



4.2.2. Overview of the EOS Sawn Softwood Consumption

Table 4.2: Overview of the EOS sawn softwood consumption 2013-2018 in 1.000 m³

	2013	2014	2015	2016	2017	2018 *	17/16 % var.	18/17 % var.*	Share % 2017
AT	5.189	5.056	5.268	5.756	5.780	5.890	0,4%	1,9%	8,6%
BE	1.880	1.930	1.900	1.750	1.850	1.850	5,7%	0,0%	2,7%
CH	1.131	1.230	1.258	1.232	1.235	1.235	0,2%	0,0%	1,8%
DE	18.159	18.170	18.483	18.729	19.166	19.500	2,3%	1,7%	28,4%
DK	1.240	1.470	1.641	1.690	1.600	1.700	-5,3%	6,3%	2,4%
FI	3.700	3.400	3.300	3.200	3.300	3.400	3,1%	3,0%	4,9%
FR	8.400	7.960	7.570	7.730	7.917	8.250	2,4%	4,2%	11,7%
IT	4.676	4.674	4.643	4.778	4.840	4.900	1,3%	1,2%	7,2%
LV	783	801	820	832	850	900	2,2%	5,9%	1,3%
NO	2.645	2.858	2.863	2.924	2.985	2.900	2,1%	-2,8%	4,4%
RO	1.171	1.188	2.529	2.383	2.450	2.550	2,8%	4,1%	3,6%
SE	4.600	4.800	5.253	5.555	5.553	5.400	0,0%	-2,8%	8,2%
UK	8.491	8.870	9.170	9.677	9.960	10.060	2,9%	1,0%	14,8%
EOS	**62.065**	**62.407**	**64.698**	**66.236**	**67.486**	**68.535**	**1,9%**	**1,6%**	**100%**

*Estimates

In 2017, total demand for sawn softwood grew by 1.9% - at a somewhat slower pace than production - and reached almost 67.5 million m³. Consumption is expected to further increase this year at a similar pace, adding around one million m³ in this group of countries. With the exception of Denmark, demand grew or was stable in all countries. A buoyant construction market (see Chapter 5 for more information) is mainly responsible for the uptake in consumption. A general recovery in industrial activity pushed up demand in the packaging sector. Sweden, Norway and Austria emphasized an increase of the utilization of wood as a building material. In this group of countries Germany continues to be the largest market for sawn softwood products with a volume of almost 19.2 million m³ in 2017 (+2.3% vs 2016) followed by the UK with 10 million m³ (+2.9% vs 2016). France ranks third with demand outdoing previous expectations and reaching a level of 7.9 million m³. Austria lies in fourth position, just ahead of Sweden.

Figure 4.3: Sawn softwood consumption volumes in the EOS member countries 2008-2018 (000 m³)

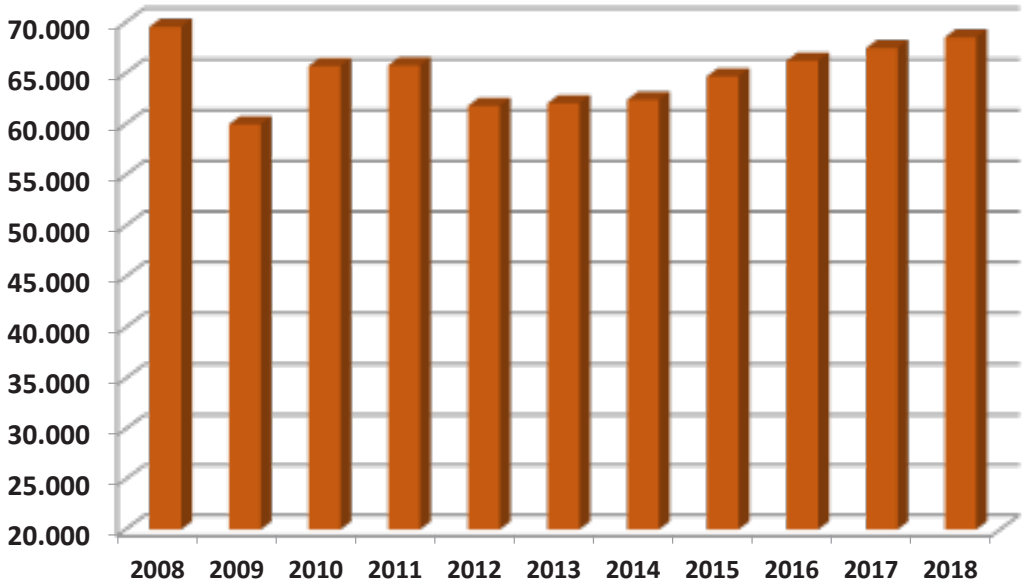
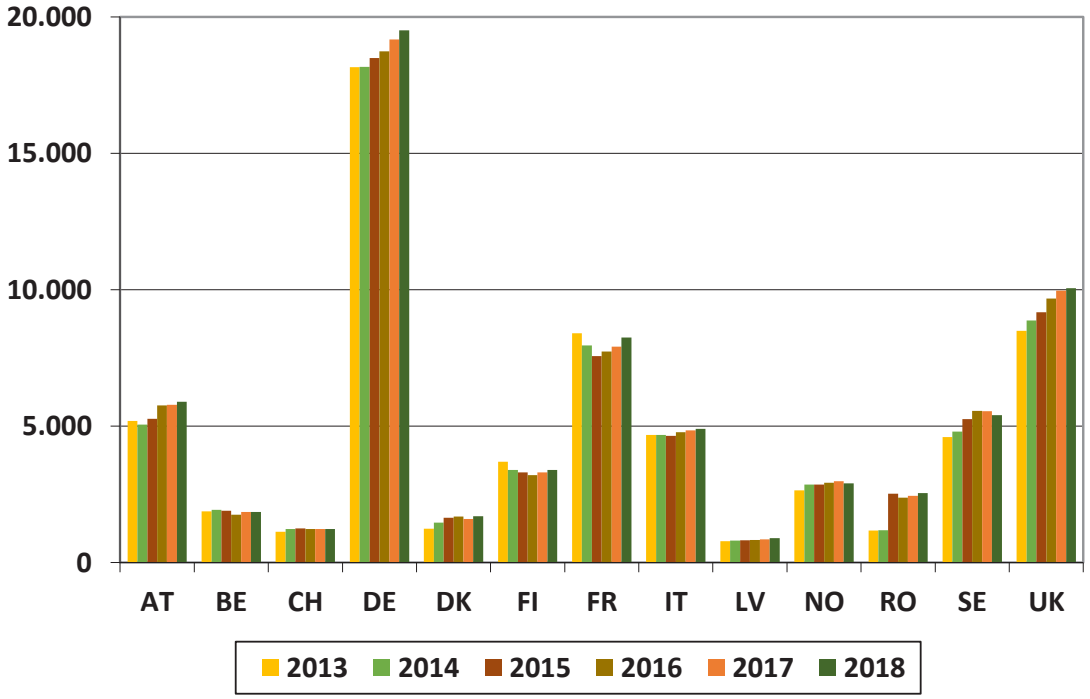


Figure 4.4: Sawn softwood consumption volumes in the EOS member countries 2013-2018 (000 m³)



4.3 Sawn hardwood

4.3.1 Overview of EOS Sawn Hardwood Production

Table 4.3: Overview of the EOS sawn hardwood production 2013-2018 in 1.000 m³

	2013	2014	2015	2016	2017	2018 *	17/16 % var.	18/17 % var.*	Share % 2017
AT	149	134	126	153	172	180	12,4%	4,7%	2,8%
BE	285	285	170	170	170	170	0,0%	0,0%	2,8%
CH	58	65	76	79	80	80	1,3%	0,0%	1,3%
DE	1.031	1.015	1.032	1.068	1.080	1.100	1,1%	1,9%	17,8%
DK	69	73	76	84	85	85	1,2%	0,0%	1,4%
FI	50	40	40	40	40	40	0,0%	0,0%	0,7%
FR	1.380	1.542	1.479	1.500	1.550	1.560	3,3%	0,6%	25,5%
IT	500	520	550	550	550	550	0,0%	0,0%	9,1%
LV	659	717	810	690	596	600	-13,6%	0,7%	9,8%
NO	0	0	0	0	0	0	-	-	0,0%
RO	1.756	1.700	1.795	1.700	1.600	1.600	-5,9%	0,0%	26,3%
SE	90	100	100	100	100	100	0,0%	0,0%	1,6%
UK	46	47	44	47	50	50	6,4%	0,0%	0,8%
EOS	**6.073**	**6.238**	**6.298**	**6.181**	**6.073**	**6.115**	**-1,7%**	**0,7%**	**100%**

*Estimates

Production in the sawn hardwood sector has not been showing any significant trends over the last few years. Demand is on the way up, with species such as oak experiencing a recovery in attractiveness. The beech market is stable in Germany (with robust demand from China) and doing well in France. However, many countries are experiencing problems in raw materials' supply, which is keeping production below potential. Countries such as France, Belgium and Germany are experiencing significant exports of raw materials to Asian countries like China. Romania, due to a stringent legislation on purchasing roundwood, has an unsatisfactory availability of raw materials. Limitations on the exports of oak from Croatia are having a negative impact on Central and South European oak processors. Therefore, a more lively market is in some cases not being taken advantage of.

Overall production in this group of countries was about 6.1 million m^3 in 2017, slightly below than in 2016. A marginal production increase will probably occur this year. We are still far from the production peak that these countries achieved back in 2007 (7.8 million m^3).

In 2017, Romania and France remain the biggest sawn hardwood producers within the EOS community, with a production of 1.6 and 1.55 million m^3 respectively. The third largest producer remains Germany, with almost 1.1 million m^3, a small increase compared to 2016.

Figure 4.5: Sawn hardwood production volumes in the EOS member countries 2008-2018 (000 m^3)

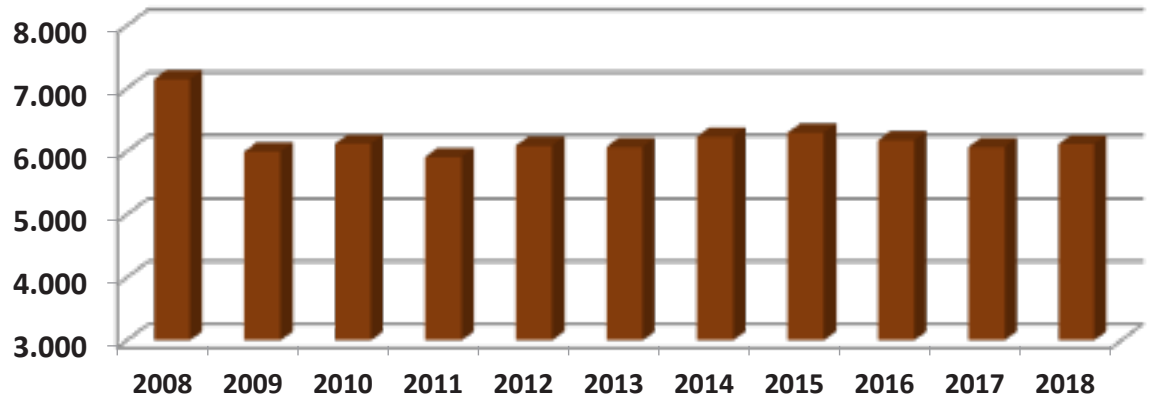
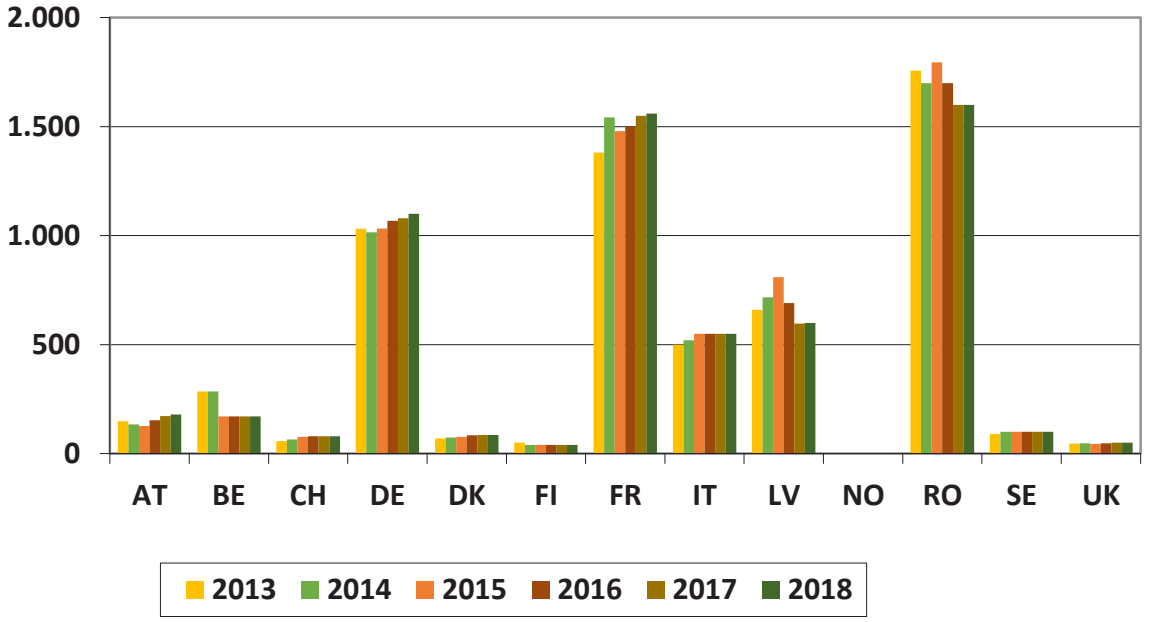


Figure 4.6: Sawn hardwood production volumes in the EOS member countries 2013-2018 (000 m^3)



4.3.2 Overview of EOS Sawn Hardwood consumption

Table 4.4: Overview of the EOS sawn hardwood consumption 2013-2018 in 1.000 m³

	2013	2014	2015	2016	2017	2018 *	17/16 % var.	18/17 % var.*	Share % 2017
AT	202	152	158	201	190	210	-5,5%	10,5%	3,7%
BE	445	435	211	230	230	230	0,0%	0,0%	4,4%
CH	78	85	111	117	122	122	4,3%	0,0%	2,4%
DE	793	741	746	756	713	725	-5,7%	1,7%	13,8%
DK	225	225	186	194	185	185	-4,6%	0,0%	3,6%
FI	63	63	54	47	40	40	-14,9%	0,0%	0,8%
FR	1.243	1.362	1.249	1.250	1.270	1.270	1,6%	0,0%	24,5%
IT	1.007	978	997	900	860	911	-4,4%	5,9%	16,6%
LV	240	240	250	253	250	250	-1,2%	0,0%	4,8%
NO	35	23	24	14	14	14	0,0%	0,0%	0,3%
RO	856	918	1.179	1.025	825	825	-19,5%	0,0%	15,9%
SE	120	120	124	123	129	129	4,9%	0,0%	2,5%
UK	410	430	365	342	350	350	2,3%	0,0%	6,8%
EOS	**5.717**	**5.772**	**5.654**	**5.452**	**5.178**	**5.261**	**-5,0%**	**1,6%**	**100,0%**

*Estimates

In 2017, sawn hardwood consumption in the EOS countries was 5.1 million m³. A noticeable decline can be observed comparing with 2016, due mainly to dropping consumption in Romania. For 2018 a slight increase is expected. Hardwood consumption remains subdued when compared to the pre-global economic crisis period (it peaked in 2007 when it reached 9.3 million m³).

France remains the largest consumer within the EOS community with almost 1.3 million m³, followed by Romania with 825,000 m³ and Germany with slightly more than 700,000 m³.

Figure 4.7: Sawn hardwood consumption volumes in the EOS member countries 2008-2018 (000 m³)

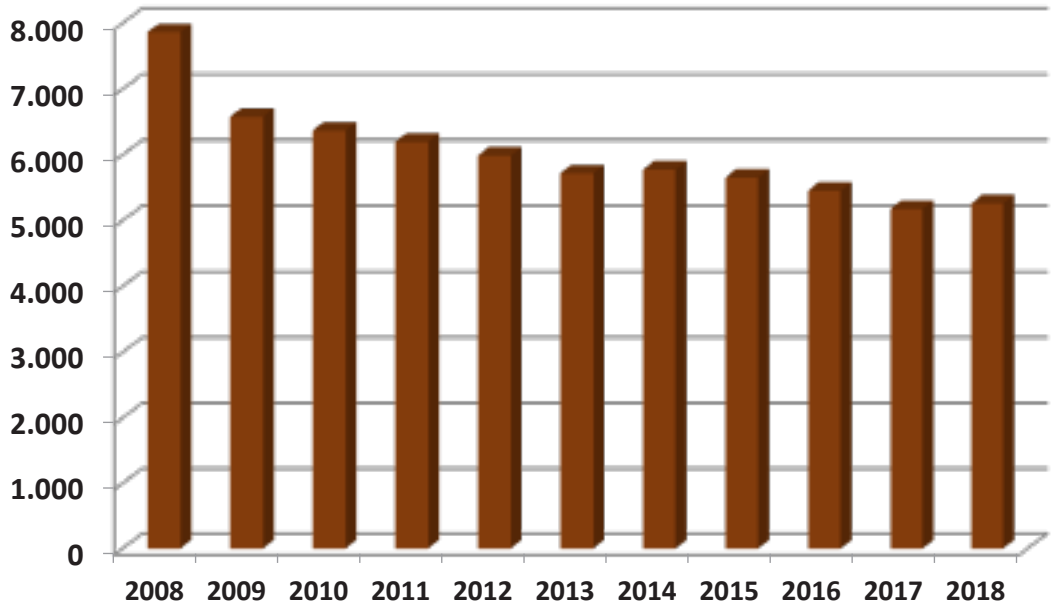
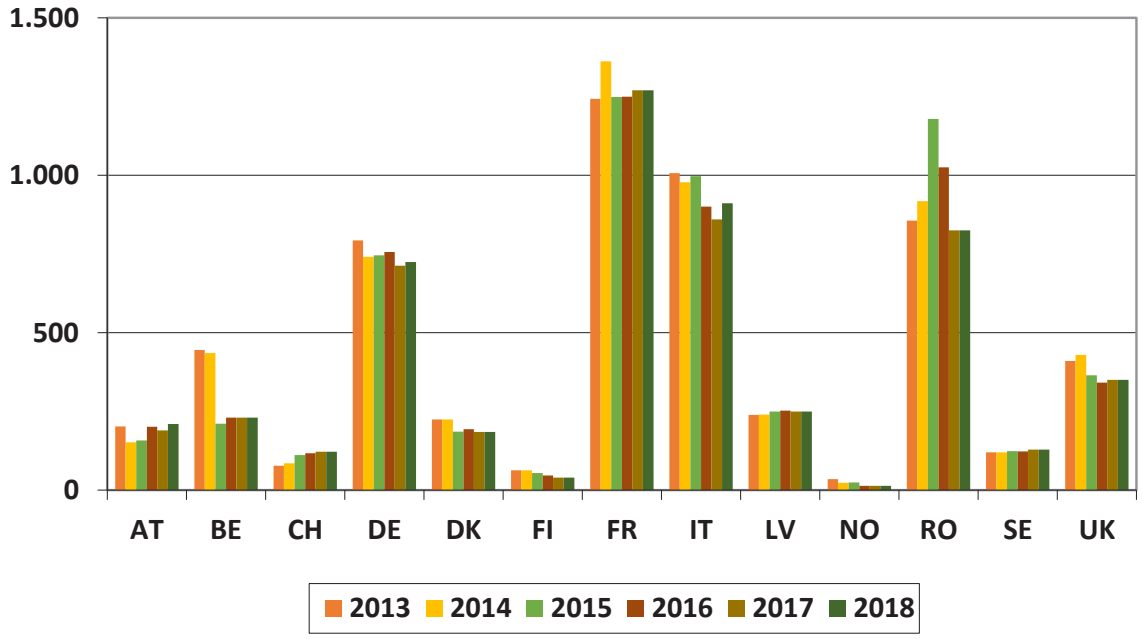


Figure 4.8: Sawn hardwood consumption volumes in the EOS member countries 2013-2018 (000 m^3)



4.4 Focus on by-products

Most EOS countries have shared data on sawmill by-products, which are reported below.

Figure 4.9: Sawdust production volumes in the EOS member countries 2015-2018 (000 m^3)

	2015	2016	2017	2018*	17/16 % var.	18/17 % var.*
AT	2.403	2.724	3.000	3.060	10,1	2,0
BE	237	207	191	198	-7,7	3,7
CH	208	207	211	211	1,9	0,0
DE	4.547	4.697	4.890	5.000	4,1	2,2
FI	3.150	3.420	3.570	3.600	4,4	0,8
LV	560	558	521	520	-6,5	-0,2
NO	244	250	260	260	4,0	0,0
RO	215	195	200	200	2,6	0,0
SE	5.200	5.300	5.300	5.300	0,0	0,0
TOTAL	**16.764**	**17.558**	**18.143**	**18.349**	**3,3**	**1,1**

*Estimates

Figure 4.10: Chips production volumes in the EOS member countries 2015-2018 (000 m^3)

	2015	2016	2017	2018*	17/16 % var.	18/17 % var.*
AT	3.300	3.500	3.700	3.774	5,7	2,0
BE	859	809	778	789	-3,8	1,4
CH	520	518	528	528	1,9	0,0
DE	9.486	9.800	10.200	10.400	4,1	2,0
FI	7.050	7.600	7.900	8.000	3,9	1,3
LV	3.158	3.145	2.997	3.027	-4,7	1,0
NO	1.495	1.500	1.500	1.500	0,0	0,0
RO	330	350	350	350	0,0	0,0
SE	11.300	11.300	11.400	11.400	0,9	0,0
TOTAL	**37.497**	**38.522**	**39.353**	**39.767**	**2,2**	**1,1**

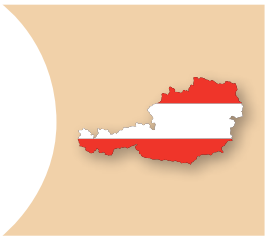
*Estimates

Figure 4.11: Bark production volumes in the EOS member countries 2015-2018 (000 m^3)

	2015	2016	2017	2018*	17/16 % var.	18/17 % var.*
AT	1.000	1.100	1.100	1.122	0,0	2,0
BE	294	276	267	272	-3,3	1,9
CH	396	380	400	400	5,3	0,0
DE	unav.	unav.	unav.	unav.		
FI	2.100	2.300	2.400	2.400	4,3	0,0
LV	430	429	400	405	-6,7	1,3
NO	500	500	500	500	0,0	0,0
RO	1.992	1.700	1.650	1.650	-2,9	0,0
SE	3.600	3.600	3.700	3.700	2,8	0,0
TOTAL	**10.312**	**10.285**	**10.417**	**10.449**	**1,3**	**0,3**

*Estimates

4.5 Country Reports



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Source: Fachverband der Holzindustrie Österreichs

General economic information

	2015	2016	2017	2018
Population *(million)*	8.6	8.7	8.7	8.8
GDP (%)	1.0	1.5	2.9	3.2
Inflation rate *(%)*	0.8	1.0	2.1	1.9
Unemployment rate *(%)*	6.0	6.0	5.5	5.2
Construction industry				
Buildings permits (units)	50 800	53 800	55 300	54 100
Housing starts (units)	47 900	49 700	51 800	52 000
Housing completions (units)	46 200	48 300	50 400	52 400
Wage Development *(%)*	1.1	0.3	0.3	0.6
Average working time in sawmilling *(h/week)*	38.5	38.5	38.5	38.5

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	8 605	9 250	9 480	9 670
Imports	1 641	1 807	1 750	1 770
Exports	5 059	5 301	5 450	5 550
Consumption	5 268	5 756	5 780	5 890

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	126	153	172	180
Imports	155	181	174	180
Exports	124	133	157	150
Consumption	158	201	190	210

2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	3	2	4	4
Hardwood	3	3	2	3

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

Market statement

The timber markets showed a positive trend throughout 2017 and in the first half of 2018 in almost all markets. Austrian sawmills were able to react and increased sawnwood production by approx. 10% from 2015 to 2017. An approx. 3 % increase in exports was also able to be attained again compared to 2016. The investment climate is also strengthened by the positive forecasts and framework conditions. Investment is taking place both in the real net output and also in the expansion of drying capacities. Renowned architects have re-discovered wood as a building material. Spectacular buildings are currently being constructed from wood on a global scale – also using Austrian know-how.

Due to the damage events occurring without warning in Austria in the summer, it was possible to store domestic roundwood in an intensified manner for the first time in a long time in 2017.

Germany continued to be an important "driver" for the European market. However, Italy remains the largest export market – with a slightly positive trend compared to the previous year. There was a very high demand for packaging wood throughout Europe. China and the USA recorded the largest relative increase in exports. Glue-laminated and increasingly prefabricated timber products recorded considerable growth. The domestic market recorded an equally positive evolution for all products. pro:Holz activities show a positive effect in all areas. European standards in modern home construction are experiencing increased demand globally due to the expertise of the Association of Austrian Wood Industries.

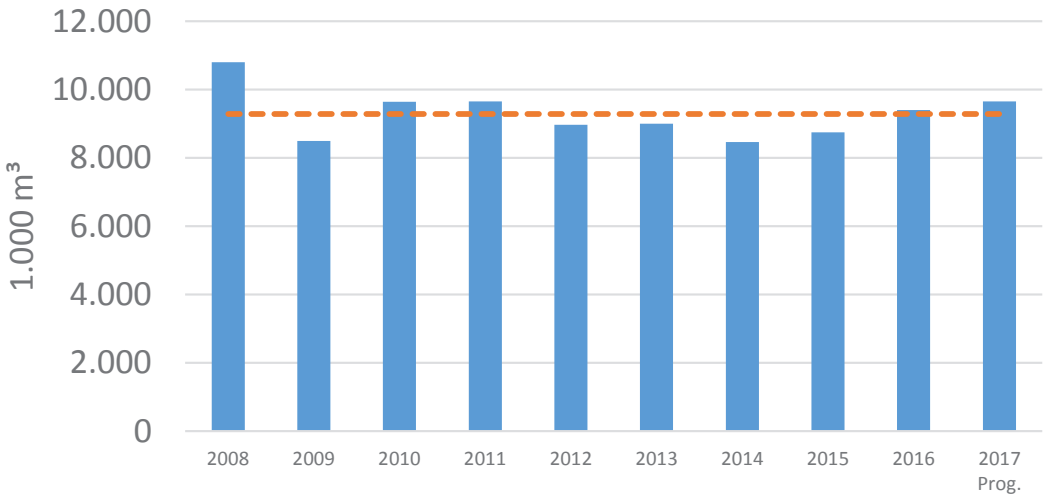
Softwood: good demand for domestic roundwood

There was a lack of "fresh" roundwood in some regions in the first half of 2017. More sawable wood was again supplied to the sawmills in the autumn after processing of quantities of damaged wood. Despite large quantities of damaged raw material in adjacent countries and the fulfilment of existing contracts, just under 1 million cubic metres more of roundwood harvested could be processed in the short term. By and large, regional crisis management worked very well. The wood prices decreased slightly in the second half of 2017 but were only slightly below the 2016 level when viewed over the entire year.

Throughout 2017, approx. 5.9 M solid cubic metres (scm) of softwood roundwood were imported to Austria (2016: approx. 6.2 M solid cubic metres). Deliveries from the largest importing country of the Czech Republic increased by 5% (2.8 M solid cubic metres) due to the widespread windfalls there. The imports from Slovenia decreased by approx. 300,000 solid cubic metres to 1.0 M solid cubic metres. Due to the early, severe onset of winter in 2017, the quantities could only be transported to the sawmills again in spring 2018.

The Austrian sawmill industry currently has a sufficient supply of roundwood, whereby different bottlenecks occur

Fig. 1: Sawn production volume in Austria and average (10 years)



Source: Statistics for Austria, provisional figures for 2017

on a regional level time and again. Domestic wood always has the highest priority. The continuous and plannable provision with all varieties throughout the year is important.

The provision of raw materials remains key

Due to the great increase in new forest owners in Central Europe, the problem of mobilising sufficient quantities of harvested wood is growing; quantities from damaged wood areas will also be absent in the medium term. Numerous mobilisation measures are currently underway. State-owned forest and major forestry companies deliver on an almost constant basis, where potential for an increase is also present in places. The sawmill industry remains a stable purchaser with high storage capacity. It has been providing forestry companies with a secure income at a very good level for decades.

The lack of transport logistics concepts, in particular for road and rail and container logistics remains a great challenge.

Good demand for sawn timber in 2017 and 2018

After years of reduction, an upwards trend has once again been apparent in the Austrian sawmill industry since 2015. An increasing level of production is therefore also anticipated for the first half of 2018 compared to 2017.

A total of 16.2 M solid cubic metres (scm) of roundwood was cut in 2017. Sawnwood production (softwood and hardwood) was approx. 9.6 M m^3 and is thus again above the average level of the last 10 years. Moderate growth figures are reported for 2018.

The Austrian sawmill industry is a large and very successful industry with over 1,000 active enterprises with almost 6,000 employees. Approx. 80% of the solid biomass wood handled in Austria goes via the sawmill industry and is thus the backbone of the wood sector. Many sawmills have attained an increase in value creation and an expansion of the product portfolio. The Austrian sawmill industry comprises almost exclusively small and medium-sized businesses and is a very important factor for the foreign trade balance of Austria. The largest eight enterprises generate approx. 50%, the 40 largest just under 90% of the overall production of sawn softwood.

The approx. 960 small and medium-sized businesses account for the remaining 10%. These are especially important for regional value creation and are significant in the regions with little structure.

Sawn Softwood export

Approx. 60% of the domestic sawnwood production is exported. Particular importance is therefore attributed to the evolution of global markets. The sawn softwood export (NSH) amounted to approx. 5.5 M m^3 in 2017 and thus increased by approx. 2.4% (2016: 5.32 M m^3). The export value increased by 3% to approx. 1.4 Bn. Euro in the sawn softwood sector alone (without planed goods).

Transactions in the main market of Italy experienced a more positive evolution again than in previous years. In absolute (preliminary) figures, this amounted to 2.6 M m^3 in 2017. This corresponds to approx. 45% of the total export and an increase of approx. 8%. Another notable increase by approx. 4% in exports to Germany to 954,000 m^3 (2016: 915,000 m^3) was attributable to the continued strong purchasing power and the housebuilding initiatives. Wood offers ideal solutions here at the highest level and with a high degree of prefabrication – from a single-family home via timber engineering to multi-storey apartment buildings in urban areas. Overall, sales in the remaining European markets were also able to increase with the higher value products.

The still-insecure political structures in Levant states lead to difficulties in exports. Algeria caused extremely market-changing stoppages in imports in the short term, other markets in North Africa hardly recovered. No quantities were able to be sold again in the region affected by ongoing war. An approx. 16% decrease to 795,000 m^3 (2016: 951,000 m^3) of Levant products was the consequence.

Sawn Hardwood

After the low level of 2014 (134,000 m^3) the production of hardwood sawmills increased to 153,000 m^3 again in 2016 and finally to 172,000 m^3 in 2017.

The demand for sawn oak has continued to increase in recent years; the roundwood supply of this wood type is currently good in Central Europe. Only the Croatian government is specifically counteracting this. A transport ban for oak roundwood and fresh timber imposed in 2017 has thus had a massive impact on market flows. The associations in Austria, Germany and Italy are protesting against this measure by supporting the EOS.

Hardwood sawmills are also satisfied with the increasing demand in the first half of 2018. Joint research and development projects should help to continue to enliven

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the “Living with wood” sector. A sleeper project initiated by Holzforschung Austria is looking for alternatives to creosote as an impregnating agent and will be completed this summer.

Transnational building timber sawmill initiative for high-quality building timber products

Numerous initiatives within the scope of the SME action plan of the specialist association were able to continue to expand shared communication and action platforms. The CE-marked products “Uso fiume”, “Uso Trieste” and MH Massivholz are agreed with the Italian partners and the producers in rural regions thus also ensure regional value creation. Numerous further training measures for all sawmills were initiated with the experts and officials in the industry and in close cooperation with the specialist groups.

New projects for profiled timber indoor and outdoor

The Association of the European Planing Industries (VEH) has evolved into an international platform for exchange of experiences on subject-specific issues in the timber planing industries in recent years. The association celebrated its 40th anniversary in 2016. The focus was on terraces and facades in 2017 where the increased demand once again had a positive impact on markets in 2017. The positive trend towards wood for indoor and outdoor use is continuing.

Increased training and further training for the sawmill industry

Training measures were increased for the certification of construction and sawn timber at the initiative of the Association of Wood Industries. Precise official examinations take place in Central Europe.

BELGIUM

Source: Fédération Nationale des Scieries

General economic information

	2015	2016	2017	2018
Population *(million)*	11.2	11.3	11.3	11.4
GDP *(%)*	1.4	1.4	1.7	1.7
Inflation rate *(%)*	0.6	1.8	2.2	1.5
Unemployment rate *(%)*	8.5	7.8	7.1	7.0
Construction industry				
Buildings permits (units)	52 500	50 163	50 000	50 000
Housing starts (units)	47 800	47 000	47 000	47 000
Housing completions (units)	46 500	46 000	46 000	46 000
Wage development *(%)*	0.0	1.1	2.7	1.5
Average working time in sawmilling *(h/week)*	38	38	38	38

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	1 500	1 400	1 350	1 380
Imports	1 300	1 300	1 400	1 370
Exports	900	950	900	900
Consumption	1 900	1 750	1 850	1 850

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	170	170	170	170
Imports	356	420	420	420
Exports	315	360	360	360
Consumption	211	230	230	230

2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	1	1	1	2
Hardwood	2	1	1	1
Oak	1	1	1	1
Beech	3	3	3	3

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

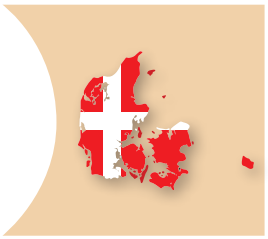
Market statement

As far as the softwoods sector is concerned, the major wood species sawn in Belgium remains the spruce. Unfortunately, the supply in spruce remains very difficult due to a decline in land areas in favor of environmental projects as well as a lack of replanting after the fields have been cleared. Due to the rarefaction of the species, a high pressure on prices can be observed. The increase in logs prices reduces the competitiveness of the Belgian sawmills with the neighboring countries. Windfall in Belgium is weak, but the amount of windfall in Germany could have an impact on the availability of logs in Belgium.

With regard to hardwood species, the situation is not better and actually similar. The demand, mainly for oak, is more and more important but unfortunately cannot be met by our sawmills given the decline in supply. The only logs available are very expensive and nevertheless, probably due to the pressure on the export market, the competition for purchase by foreign buyers (also coming from neighboring countries) remains important. All necessary means are available in order to encourage the municipalities to develop private sales.

DENMARK

Source: Dansk Traeindustrier



General economic information

	2015	2016	2017	2018
Population *(million)*	5.66	5.71	5.74	5.74
GDP *(%)*	0.9	1.7	2.3	2.4
Inflation rate *(%)*	0.5	0.3	1.1	1.4
Unemployment rate *(%)*	6.5	4.5	4.1	4.1
Construction industry				
Buildings permits (units)	24 211	28 577	21 379	22 000
Housing starts (units)	20 373	24 992	15 827	16 400
Housing completions (units)	14 768	20 963	23 449	24 300
Wage Development *(%)*	2.0	2.0	2.2	2.2
Average working time in sawmilling *(h/week)*	37	37	37	37

2017 and 2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	352	310	320	320
Imports	1 400	1 500	1 400	1 500
Exports	111	120	120	120
Consumption	1 641	1 690	1 600	1 700

2017 and 2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	76	84	85	85
Imports	210	210	200	200
Exports	100	100	100	100
Consumption	186	194	185	185

2017 and 2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	4	3	2	2
Hardwood	3	3	3	3

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

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Market statement

The main softwood species in Denmark remains the Norway spruce and to some extend Sitka spruce. Most raw material to the softwood sawmills is locally produced with only small imports. Most production is consumed locally.

In 2017, softwood sawmills have experienced difficulties getting enough logs to keep a stable production primarily due to wet weather conditions, which limited logging activities in the forests. At the same time, increasing quantities of logs are exported, about 40 pct. of total round wood production. Softwood is exported to Germany and Sweden, primarily from eastern parts of the country where there are no softwood sawmills, but increasing amounts are exported to Asia, where buyers are offering competitive prices. The situation has forced several softwood sawmills to import logs from e.g. Norway.

The Danish softwood sector remains highly exposed to strong competition in the softwood market. Direct competitors in Germany and Sweden benefit from big scale production, whereas the Danish industry is small, and the relatively high wages in Denmark are a challenge, especially compared to low-wage countries like the Baltics. In general, the production capacity is not fully utilized due to lack of raw material.

The main hardwood species in Denmark remain beech and oak. The hardwood sector is generally more globalized than the softwood sector. Danish hardwood sawmills import about half of their round wood and at the same time more than half of round wood production in the forests is exported, primarily to Asia.
The recent wet weather conditions have not influenced the hardwood sawmills to the same extent as softwood sawmills and the hardwood sawmills have been able to keep a stable production.

The Danish energy sector has converted a large part of the energy production to be based on biomass, primarily wood. Most wood is imported as pellets, but it is evident that the local wood market is influenced by increasing demand from the energy sector, and recently due to limited logging activities due to wet weather conditions. Especially lower grade softwood, normally used for wood packaging and panels, and lower grade hardwood, normally used for e.g. flooring, have experienced increasing prices and competition for access to raw material.

In general most of the wood used in Denmark is imported. The wood is sold through timber traders and building markets, which is an industry characterized by very large and competitive players that are capable to push down sawnwood prices.

The Danish wood industry is small, compared to neighboring countries, however it is of high value locally as it creates important jobs in rather remote parts of the country.

FINLAND

Source: Sahateollisuus ry and UNECE/FAO

General economic information

	2015	2016	2017	2018
Population *(million)*	5.4	5.5	5.5	5.5
GDP *(%)*	0.3	1.9	3.1	2.5
Inflation rate *(%)*	-0.1	0.4	0.8	1.2
Unemployment rate *(%)*	9.4	8.8	8.7	8.1
Construction industry				
Buildings permits (units)	32 229	40 522	47 858	50 000
Housing starts (units)	33 064	37 567	45 259	47 000
Housing completions (units)	28 518	30 266	35 640	40 000
Wage Development *(%)*	1.2	0.0	0.0	1.6
Average working time in sawmilling *(h/week)*	40	40	40	40

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	10 500	11 400	11 900	12 000
Imports	440	470	480	490
Exports	7 900	8 600	8 800	9 000
Consumption	3 300	3 200	3 300	3 400

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	40	40	40	40
Imports	27	20	16	16
Exports	13	14	16	16
Consumption	54	47	40	40

2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	3	3	3	2
Hardwood	-	-	-	-

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

Market statement

Finland

The Finnish GDP growth in 2017 reached 3,1%. According to Bank of Finland, the growth will decelerate to 2,5% in 2018, and 1,5% per annum in 2019 and 2020. Inflation will accelerate slightly but it is expected that it will remain well below the EU average. The accommodative monetary policy in the Euro area, as well as healthy growth of Finland's main trading partners have boosted exports – and the domestic growth. It is expected that the Finnish export sector will continue to benefit from the strong growth of trading partners and improved cost-competitiveness. Especially the European investments will support the Finnish exports. However, it must be noted that impact of the growth of exports will, after 2017, have less impact on GDP growth since a substantial part of the input factors within the export industries are imported intermediate products. The GDP growth actually leans heavily on the growth of productivity. On top of this, increasing domestic demand will increase imports. However, it is still expected that the current account will stay in balance until 2020 – supporting sustainable growth. However, sustainability will not be reached due to the gap in public finances as the deficit is expected to remain at 3%.

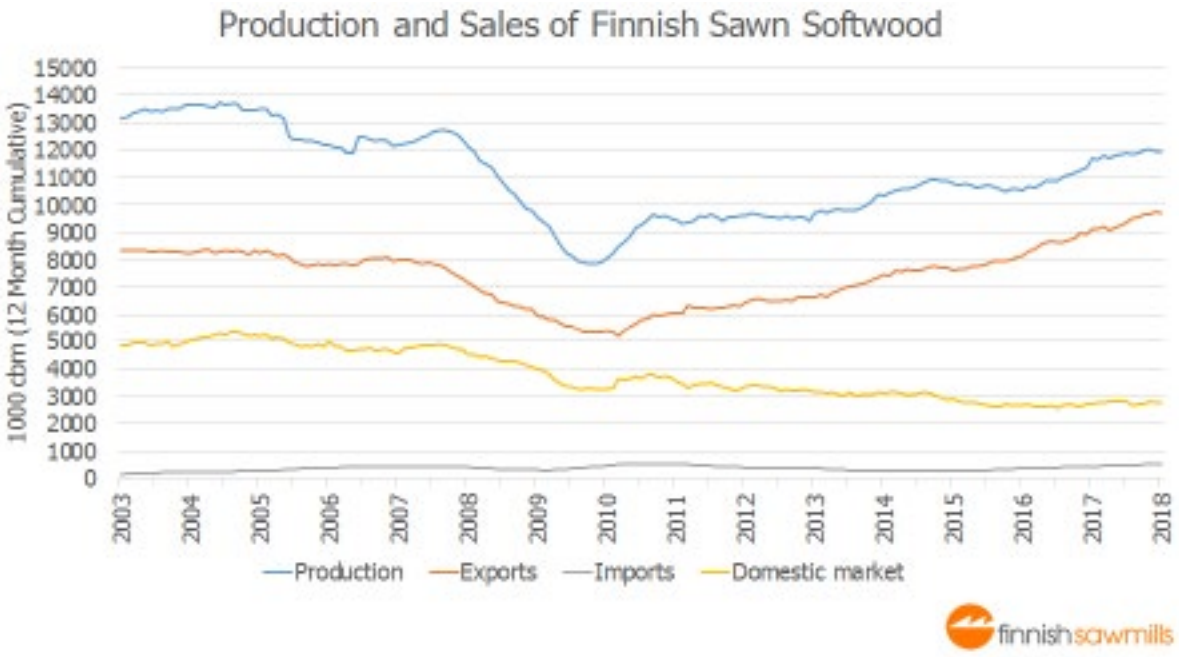
Forest industry

The Finnish forest industry sector has finally recovered from the financial crisis. However, due to structural changes in the demand of forest products, the degree of Finnish value adding has moved backwards. The recent investments have mainly focused on capacity and production increases in basic products, pulp and sawn softwood. The export share of paper has been shrinking, as well as the share of value added wood products. The pulp industry have enjoyed excellent profitability, while the sawmillers have been struggling with fast growing costs.

Sawmills

The Finnish production of sawn softwood reached almost 12 million m^3. The record is 13,5 million m^3, scored in 2003. However, at that time, 4 million m^3 of sawlogs (equalling 2 million m^3 of sawn wood) were imported, while currently practically whole production is based on domestic logs. Thus the consumption of logs hit an all-time record in 2017. The availability of logs was scarce, and log prices strengthened. Due to a rainy autumn, the mills in the South had to curtail productions at the end of the year. The dust

Fig 1: Production and sales of Finnish Sawn Softwood



Source: Finnish Customs, Finnish Sawmills, Finnish Forest Industries

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and bark market suffered from oversupply of forest chips, which enjoy subsidies within the energy market. Pulp chip market has been buoyant, but price development has been dissatisfactory.

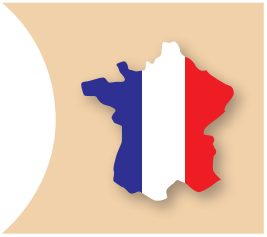
Finland exported about 9 million m^3 in 2017. The export demand was brisk, but domestic consumption has not recovered to pre-financial crisis time. Thus the increased production has been exported. The export demand has been driven by China. The Wood from Finland promotion campaign has successfully supported exports to different market segments in China, even though the main end-user is still the furniture industry. The share of redwood increased substantially in 2017. The domestic market remained dull due to limited volume of timber frame construction.

Logistics played a major role within the sawmill sector in 2017. The container freights increased rapidly in the spring – putting sawmills and their customers in a difficult position. However the mills were able to react fast in moving cargoes from containers to bulk vessels – and gathered valuable information of challenges related to the bulk cargoes – as not all trials were successful. The container freights returned to acceptable level later, and practically everything is transported in containers and by sea. However, also rail connections are developing and the first shipments from Kouvola to Nankang have been seen. This route is supported by the Chinese Belt and Road initiative.

The demand for sawn softwood increased faster than production in 2017, resulting in an increase of prices. The deliveries have remained on high level even during the winter months and stocks at sawmills are low. The market outlook remains positive, thanks to positive prospects of the global economy. The supply will be somewhat constrained in North America as well as in China. However, increasing timber stocks in China may result in moderating trading volumes during the first half of 2018. Thus, from the Finnish point of view, 2018 looks quite positive – in case the costs can be kept under control within the industry.

FRANCE

Source: Fédération Nationale du Bois



General economic information

	2015	2016	2017	2018
Population *(million)*	66.3	66.7	66.95	67.19
GDP *(%)*	1.3	1.3	2.0	2.0
Inflation rate *(%)*	0.0	0.2	1.0	1.2
Unemployment rate *(%)*	10.3	10.0	8.9	8.0
Construction industry				
Buildings permits (units)	379 000	453 700	497 000	519 000
Housing starts (units)	350 700	378 900	418 900	430 000
Housing completions (units)	320 000	350 000	370 000	380 000
Wage Development *(%)*	0.5	1.0	1.5	1.7
Average working time in sawmilling *(h/week)*	39	39	39	39

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	6 230	6 400	6 660	6 900
Imports	2 100	2 100	2 000	2 100
Exports	760	770	743	750
Consumption	7 570	7 730	7 917	8 250

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	1 479	1 500	1 550	1 560
Imports	200	200	200	200
Exports	430	450	480	490
Consumption	1 249	1 250	1 270	1 270

2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	3	3	4	4
Hardwood	1	1	1	1

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

Market statement

The year 2017 in France is characterized by a return of confidence and growth.
France has experienced a big political change with the unexpected election of President Macron and a complete reshuffle of the political landscape.
Growth of GDP, which reached 2%, was unexpected and accelerated in the second half of 2017. It was initially forecasted at 1.7%. This political environment favored the return of construction projects first in the public and then in the private sector.
After falling to nearly 300,000 units, housing starts accelerated to more than 400,000 dwellings. In 2018 the progression is less strong but remains at a good level.
In these conditions, the recovery in real estate led to a sharp rise in demand, to which mills were not fully prepared due to the poor economic climate that had prevailed for six years. Demand for wood has therefore picked up and to cope with national demand the sawmills have moderated their exports as imports stagnate. Since September 2017, softwood sawmills have been operating at a good pace in a context where log supplies have been satisfactory in both volume and price throughout the year.
In the packaging sector, as well as in the pallets one, the demand is very strong and reflects a European recovery in industrial activity.
The pulp sector and the energy sectors are the least dynamic ones. In the energy sector, rising oil prices have limited new projects and encouraged energy players to use more gas. This leads to difficulties in selling certain products and price decreases. The emergence of new projects would be necessary to better balance the uses.
In the hardwood sector, the situation varies depending on the species. Beech, as well as poplar and other precious hardwood species, are doing well. On the other hand, in oak, the situation is paradoxical. On the demand side, after 35 years of difficulties, there is a recovery in all qualities and destinations (national, European and international). The species knows a revival of attractiveness. But on the supply side, sawmills are experiencing a situation which is desperate but unfortunately not surprising. 25% of the harvest was exported in the form of unprocessed logs in 2017 (70% to China) or 500,000 m^3 and the trend of the first quarter of 2018 is 20% above. The harvest is slightly increasing but not as much as the sector needs. The result is a supply crisis and social and economic measures to counter this unfortunate situation need to be implemented.
More generally, the economic situation remains well oriented and wood is politically supported.

Original Text

L'année 2017 est marquée en France par un retour de la confiance et de la croissance.
La France a connu un changement politique fort avec l'élection inattendue du président Macron et une recomposition complète du paysage politique. La croissance de 2% en moyenne était inattendue et s'est accélérée au 2ème semestre 2017. Elle était programmée initialement à 1.7%.
Cet environnement politique a favorisé le retour des projets de construction d'abord dans le collectif puis dans le secteur privé. Après être tombés à près de 300 000 unités les mises en chantier se sont accélérées et ont ainsi retrouvé un rythme supérieur à 400 000 logements.
En 2018 la progression est moins forte mais reste à un bon niveau. Dans ces conditions, la reprise de l'immobilier a entrainé une forte hausse de la demande à laquelle les scieries n'étaient pas complètement préparées compte tenu du mauvais climat économique qui régnait depuis 6 ans.
La demande en bois s'est redressée même si la place du bois a tendance à stagner. Pour faire face à la demande nationale les scieurs ont modéré leurs exportations car les importations stagnent.
Depuis septembre 2017 les scieries résineuses tournent à bon régime dans un contexte où l'approvisionnement en grumes a été satisfaisant en volume comme en prix sur l'ensemble de l'année.
Dans le secteur de l'emballage, coffrage comme palettes, la demande est très forte et traduit une reprise européenne de l'activité industrielle. Ce sont les secteurs de la trituration et de l'énergie qui sont les moins dynamiques. S'agissant du secteur de l'énergie, la hausse du prix du pétrole a limité les nouveaux projets et encouragé les énergéticiens à utiliser plus de gaz. Il s'en suit des difficultés d'écoulement de certains produits et des baisses de prix. L'émergence de nouveaux projets serait nécessaire afin de mieux équilibrer les usages.
Dans le secteur feuillu, la situation est contrastée selon les essences. En hêtre la conjoncture reste correcte tout comme en peuplier et pour les feuillus précieux. En revanche en chêne, la situation est paradoxale. Coté demande, après 35 ans de difficultés cette dernière se redresse dans toutes les qualités et destinations (nationale, européenne et internationale). L'essence connait un regain d'attractivité. Mais coté approvisionnement, les scieries vivent une situation aussi désespérée qu'attendue. Il a été exporté 25 % de la récolte sous forme de grumes non transformées en 2017 (70% à destination de la chine) soit 500 000 m^3 et la tendance du 1er trimestre 2018 se situe 20% au-dessus. La récolte quant à elle progresse mais très légèrement. Il en résulte une crise d'approvisionnement et des mesures sociales et économiques.
Plus globalement la conjoncture reste bien orientée et le bois soutenu politiquement.

GERMANY

Source: Deutsche Säge-und Holzindustrie (DeSH)

General economic information

	2015	2016	2017	2018
Population *(million)*	81.5	82.2	82.6	82.6
GDP *(%)*	1.7	1.9	2.7	2.3
Inflation rate *(%)*	0.3	0.4	1.7	1.7
Unemployment rate *(%)*	4.6	4.6	3.8	3.5
Construction industry				
Buildings permits (units)	264 346	316 550	300 695	n.a.
Housing starts (units)	n.a.	n.a	n.a.	n.a.
Housing completions (units)	216 727	235 658	265 000	275 000
Wage Development *(%)*	2.6	3.2	2.8	2.8
Average working time in sawmilling *(h/week)*	40	40	40	40

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	20 433	21 109	22 000	22 500
Imports	4 579	4 915	4 994	5 000
Exports	6 529	7 295	7 828	8 000
Consumption	18 483	18 729	19 166	19 500

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	1 032	1 068	1 080	1 100
Imports	411	393	393	400
Exports	697	705	760	775
Consumption	746	756	713	725

2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	2	2	2	3
Hardwood	3	3	3	3

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

Market statement

The German sawmill industry enters 2018 in a stronger position

The German sawmill industry closed 2017 with a positive result. Above all the good 4th quarter dominated the annual result decisively. The overall economic environment continued to improve in 2017: gross domestic product (GDP) amounted to + 0.6 % in the fourth quarter (+ 0.9 % in the first quarter, + 0.6 % in the second quarter and + 0.7 % in the third quarter). Looking at 2017 as a whole, GDP grew by + 2.5 % over the previous year and was therefore higher than previously forecast. Europe also showed an improvement in the economy, which means that there is growth impulses from Germany and abroad.

Softwood

In Germany, demand for sawn timber from all important customer segments increased - the strongest growth was recorded in the fourth quarter. However, the development is strongly dominated by the revival of exports. Exports within Europe have risen slightly, while long-distance exports have risen strongly.

Domestic sales, like unit sales within the euro zone, were comparatively moderate at + 2.7 % and by far less dynamic than distance sales.

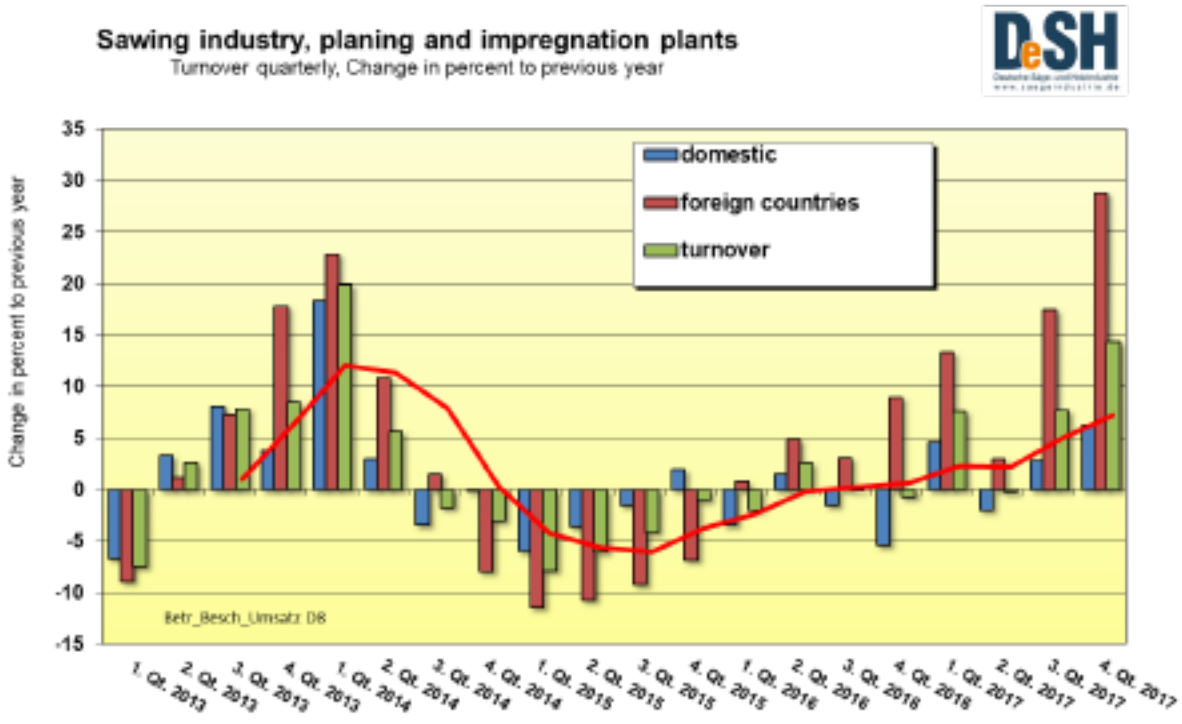
The increase in employment is remarkable. The number of employees rose by + 3.2 % in 2017 as a whole and by 4.4 % at the end of the year.

The **export** of sawn softwood companies has been greatly expanded in 2017. While deliveries within Europe developed very differently, i.e. were predominantly higher, Austria, the most important export partner, imported a little less in 2017. Distance sales increased strongly, especially to India and the USA. By contrast, deliveries to the Levant region were down on the previous year.

The **balance** for the softwood sawn timber market in 2017 will show a significant increase in sawn softwood production to 22 million m^3, an increase of 4 % over the previous year, with an above-average increase in planed timber production. With **imports** remaining largely constant at approx. 5.0 million m^3, exports with an expected 7.8 million m^3 (plus 7.3 %) made the significant increase in domestic production possible. In 2017, domestic consumption increased by only just over 2% to 19.1 million m^3 and thus by approx. 500 thousand m^3.

Raw wood market affected by storms

The **raw wood market** was affected by several storms



Sawing and planing mills with 50 or more employees, Source: Destatis Monthly Report

Sawing industry, planing and impregnation plants

Turnover, Enterprises, Employees

in Mio EURO	Jan.-Dec. 2016	Jan.-Dec. 2017	Change in %	Dec. 2016	Nov. 2017	Dec. 2017	Change in % vs. prev. Year	Change in % vs. prev. Month
Turnover, total	3.752,3	4.014,9	7,0	219,9	378,4	253,2	15,1	-32,7
of it Domestic turnover	2.461,7	2.527,8	2,7	134,8	224,5	143,8	8,7	-35,9
of it Foreign turnover	1.290,7	1.487,3	15,2	85,1	151,9	109,3	28,4	-28,0
Foreign turnover Euro zone	835,9	843,8	1,0	47,9	77,5	51,7	7,9	-33,3
Foreign turnover outside Euro zone	454,8	643,5	41,5	37,2	74,4	57,6	54,9	-22,6
Share of foreign turnover in %	*34,4*	*37,0*		*38,7*	*40,4*	*43,2*		
Enterprises	95	94	-1,5	94	94	93	-1,1	-1,1
Employees	10.369	10.899	3,2	10.492	10.952	10.963	4,4	0,0

Enterprises with 50 and more employed
Source: DeStatis, statistic of enterprises

(most recently the hurricane Friederike with approx. 8 million m³ of damaged timber). Processing, cutting and advancing are difficult due to soaked forest soils and have even been stopped in some cases. The persistently wet and barely passable forest soils became a real problem when supplying the sawmills.

The amount of damaged wood from the storms is taken up by the sawmill industry. In regional terms, there were slight quality-related price declines due to the volumes of storm timber, but at the same time this also entailed additional expenses for scheduling and cutting. This results in only marginal relief for the regionally affected farms.

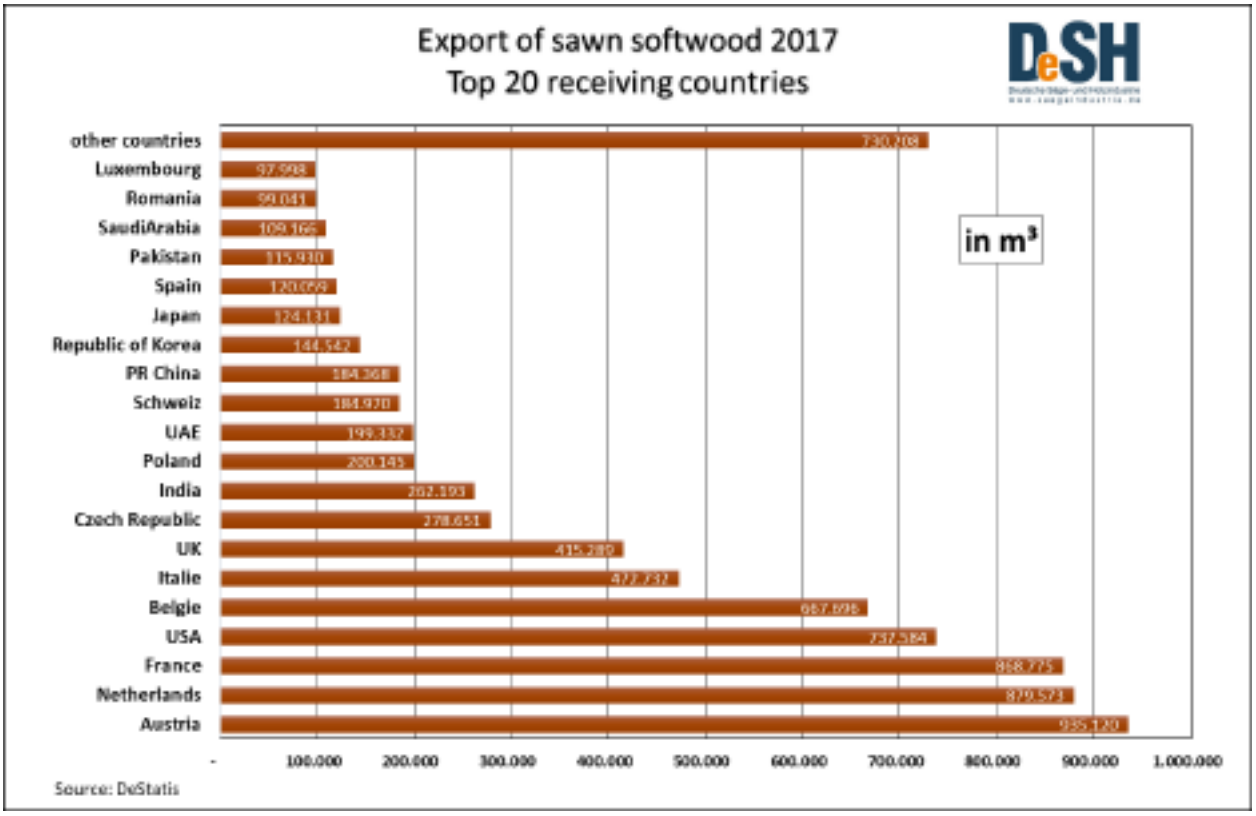
Profit situation improved, but strongly increasing demands of customers

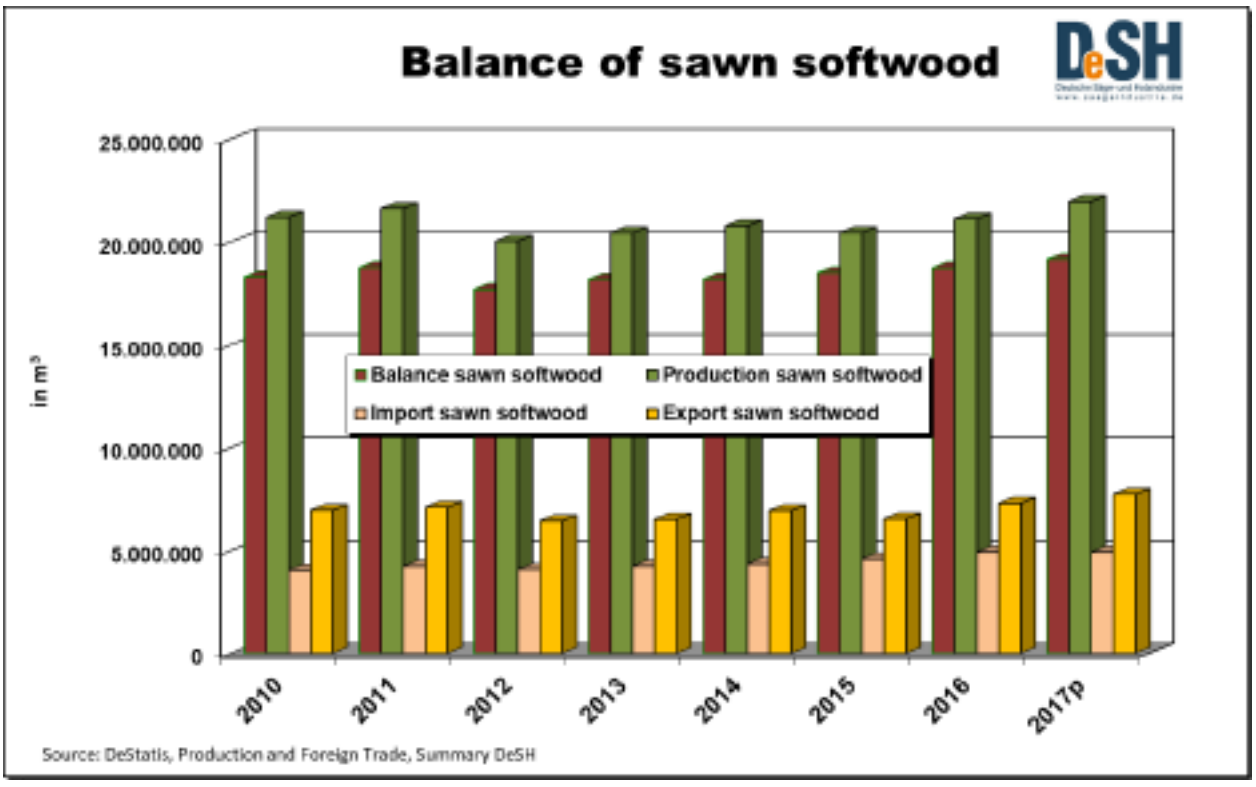
With increased production, a good export situation and little change in the raw materials/**revenues situation**, earnings improved slightly overall.

Export of sawn softwood
planed and unplaned timber
in m³

	2014	2015	2016	2017
Austria	941.425	941.074	987.526	935.120
Netherlands	740.482	731.926	820.220	879.573
France	823.515	782.860	808.748	868.775
USA	106.801	81.906	202.552	737.584
Belgie	543.388	497.967	605.854	667.696
Italie	460.707	447.788	447.489	472.732
UK	402.264	376.170	404.445	415.289
Czech Republic	279.111	279.292	285.782	278.651
India	141.537	214.991	225.090	262.193
Poland	224.237	225.147	222.628	200.145
UAE	167.539	182.193	202.995	199.332
Schweiz	167.912	180.154	176.043	184.970
PR China	306.732	133.057	207.966	184.368
Republic of Korea	159.920	113.267	138.460	144.542
Japan	84.563	58.413	175.073	124.131
Spain	71.613	82.338	108.987	120.059
Pakistan	65.547	68.734	100.446	115.930
SaudiArabia	182.350	217.523	179.049	109.166
Romania	5.306	14.169	98.406	99.041
Luxembourg	50.425	52.623	79.954	97.998
other countries	1.009.077	847.913	817.073	730.208
	6.934.452	**6.529.505**	**7.294.787**	**7.827.503**

Source: DeStatis

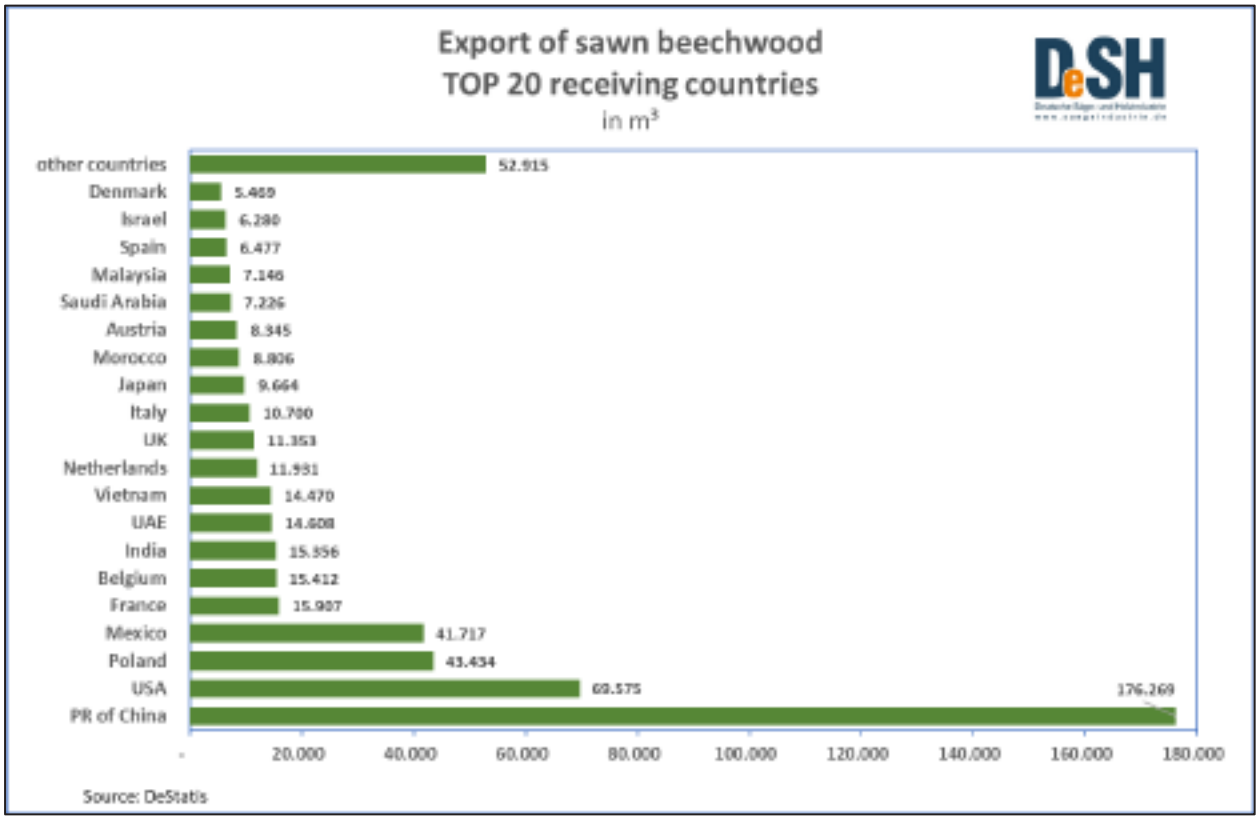




Further strongly increasing requirements come from the **customers**. The sawmill industry reacts with qualitative improvements and new or further developed products. The German sawmill industry benefits from the fact that the broad structure of the industry and the large product range can handle the differentiated demand in Germany.

Germany continues to be the largest consumer market for sawn softwood in Europe. This and the high standard of German companies is also a plus in exports - this is particularly important for a country that is one of the

Sawn softwood					
2018 is an estimate					
	Unit	**2015**	**2016**	**2017p**	**2018**
Production	*1.000 m³*	20433	21109	22000	22500
Imports	*1.000 m³*	4579	4915	4994	5000
Exports	*1.000 m³*	6529	7295	7828	8000
Consumption	*1.000 m³*	18483	18729	19166	19500
Source: DeStatis, forecast DeSH					



countries with the highest raw material costs worldwide.

The **industry** is now highly diversified, many companies are increasingly going into further processing, product refinement and are focusing on further developed products such as laminated timber and cross laminated timber. It also fulfills the increasing requirements of other customers such as packaging and pallets.

Residential construction was somewhat weaker again in 2017, but is characterised by high standards in timber construction with increasing market shares. This is strengthening sales to the construction sector.

Value added is increasing and has a positive effect on the development of the number of employees.

Outlook: Overall, a continued good overall economic development is expected for 2018 in Germany, but also in Europe. Activity in the construction sector, the most important customer of the sawmill industry, is expected to increase slightly. Significant impulses are expected from the packaging sector, especially for export packaging. Hopes are based on continued stable exports to Europe and an improvement in the Levant region. Special expectations are for exports to Asia, possibly the USA could also be a very interesting market again.

Hardwood

The hardwood market continues to develop steadily at a fixed level. Beech continues to have a stable domestic market. In particular, the export sector was able to achieve a significant increase in distance sales in 2017. China, by far the most important customer, again purchased significantly more beech in 2017.

Export of sawn beechwood

in m³

	2014	2015	2016	2017	Change % 2017:2016
PR of China	140.920	138.112	129.117	176.269	36,5
USA	59.061	63.058	65.875	69.575	5,6
Poland	44.619	45.155	40.110	43.434	8,3
Mexico	24.100	35.293	36.674	41.717	13,8
France	12.056	13.149	13.532	15.907	17,6
Belgium	14.059	16.504	12.600	15.412	22,3
India	21.649	14.303	16.034	15.356	-4,2
UAE	12.397	10.596	14.437	14.608	1,2
Vietnam	9.464	8.245	10.037	14.470	44,2
Netherlands	14.167	11.792	11.652	11.931	2,4
UK	14.311	14.952	12.912	11.353	-12,1
Italy	9.347	11.550	9.852	10.700	8,6
Japan	6.698	8.041	9.287	9.664	4,1
Morocco	4.772	5.860	6.490	8.806	35,7
Austria	6.151	5.364	4.848	8.345	72,1
Saudi Arabia	7.647	7.459	7.248	7.226	-0,3
Malaysia	10.731	9.968	7.777	7.146	-8,1
Spain	4.799	5.505	6.068	6.477	6,7
Israel	6.994	8.683	9.568	6.280	-34,4
Denmark	2.030	3.009	3.387	5.469	61,5
other countries	48.699	47.608	50.678	52.915	
total	**474.671**	**484.206**	**478.183**	**553.060**	**15,7**

Source: DeStatis

Sawn hardwood

2018 is an estimate

	Unit	2015	2016	2017p	2018
Production	*1.000 m³*	1032	1068	1080	1100
Imports	*1.000 m³*	411	393	393	400
Exports	*1.000 m³*	697	705	760	775
Consumption	*1.000 m³*	746	756	713	725

Source: DeStatis, forecast DeSH

The market for oak is again lively across all qualities and product ranges. Ash is currently still available in sufficient quantities, also from the necessary earlier uses caused by the ash dieback. There is a concern that in the following years considerably less ash will come onto the market.

Due to the stable market trend and the good export situation, the production of hardwood lumber could be slightly expanded to 1.1 million m³ in 2018.

Continuing concern for hardwood sawmillers is the tendency in oak to increasingly offer the logs by submission. This removes the raw material from the traditionally regionally supplying sawmillers with knowledge of the regional qualities and growth characteristics.

In beech, exports of raw beech wood again rose strongly. Almost 800,000 cubic metres of beech logs were exported in 2017. In the meantime, a considerable proportion of the beech harvest is exported, often to distant countries. This raw material is no longer available to the domestic sawmill industry.

ITALY

Source: Federlegno, UNECE/FAO, European Commission and EUROCONSTRUCT

General economic information

	2015	2016	2017	2018
Population *(million)*	60.8	60.7	60.6	60.5
GDP *(%)*	1.0	0.9	1.5	1.5
Inflation rate *(%)*	0.1	-0.1	1.3	1.3
Unemployment rate *(%)*	11.9	11.7	11.3	10.9
Construction industry				
Buildings permits (units)	80 100	82 900	84 700	87 100
Housing starts (units)	80 500	83 100	85 000	86 900
Housing completions (units)	86 200	81 600	80 600	83 100
Wage Development *(%)*	1.0	0.5	0.5	1.5
Average working time in sawmilling *(h/week)*	40	40	40	40

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	920	950	970	950
Imports*	3 873	3 981	4 050	4 100
Exports	150	153	180	150
Consumption	4 643	4 778	4 840	4 900

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	550	550	550	550
Imports	601	591	525	600
Exports	154	238	213	237
Consumption	979	900	860	911

2018 data are estimates

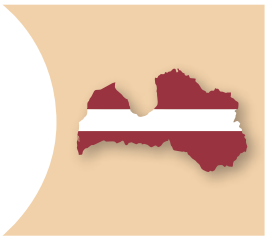
Availability of logs

	2015	2016	2017	2018
Softwood	3	3	3	-
Hardwood	3	2	3	-

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

LATVIA

Source: Association of Latvian Timber Producers and Traders



General economic information

	2015	2016	2017	2018
Population *(million)*	2.0	2.0	2.0	1.9
GDP *(%)*	2.8	2.1	4.5	4.1
Inflation rate *(%)*	0.2	0.1	2.9	2.7
Unemployment rate *(%) (15-64)*	8.7	8.4	6.8	6.1
Construction industry				
Buildings permits (units)	2809	2376	3145	3000
Housing starts (units)	n.a.	n.a.	n.a.	n.a.
Housing completions (units)	n.a.	n.a.	n.a.	n.a.
Wage Development *(%)*	6.8	5.0	7.5	8.3
Average working time in sawmilling *(h/week)*	n.a.	n.a.	n.a.	n.a.

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	2 690	2 792	2662	2690
Imports	570	779	934	850
Exports	2 440	2739	2746	2640
Consumption	820	832	850	900

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	810	690	596	600
Imports	30	29	28	30
Exports	590	472	374	380
Consumption	250	253	250	250

2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	4	4	2	3
Hardwood	3	3	2	3

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

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Market statement

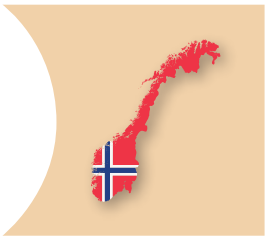
The year 2017 was strongly influenced by the availability of sawlogs both in terms of foreign trade and local forestry. From spring in part of Latvia and from autumn in all country due to the heavy rainfalls there were unfavorable conditions for forestry, which resulted even in the announcement by the government of force majeure at the end of the year. In addition to local challenges, the Belarusian government completely stopped export of softwood sawlogs. Moreover, export of Latvian roundwood to China substantially increased. This has resulted in a significant increase in the price of sawlogs.

However, sawmills are not only helped by the favorable global sawn material market, but also by a significant increase in demand and prices for by-products (dust, chips, fuel biomass, pellets). The classical sawmills are in a more favorable position, while the conditions for packaging material producers are difficult. The forest owners reduce the sorting of the low quality and small dimension sawlogs in the forest, because it is more profitable to sell them in pulpwood (compared with the beginning of the year, the price of pulpwood rose by >50%).

2018 is expected to be favorable for sawn material and by-product markets, however the availability of sawlogs will not allow to increase production volumes.

NORWAY

Source: Treindustrien, UNECE/FAO



General economic information

	2015	2016	2017	2018
Population *(million)*	5.2	5.2	5.3	5.3
GDP *(%)*	2.0	1.1	2.2	2.2
Inflation rate *(%)*	2.7	3.6	1.7	1.9
Unemployment rate *(%)*	4.3	3.6	4.2	3.9
Construction industry				
Buildings permits (units)	31 301	36 203	35 273	35 300
Housing starts (units)	30 927	36 203	35 273	35 000
Housing completions (units)	28 135	29 394	34 557	35 000
Wage Development *(%)*	2.8	1.8	2.3	2.9
Average working time in sawmilling *(h/week)*	37.5	37.5	37.5	37.5

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	2 444	2 533	2 655	2 600
Imports	979	991	996	950
Exports	560	600	666	650
Consumption	2 863	2 924	2 985	2 900

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	-	-	-	-
Imports	24	14	14	14
Exports	-	-	-	-
Consumption	24	14	14	14

2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	2	2	2	2
Hardwood	-	-	-	-

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

Market statement

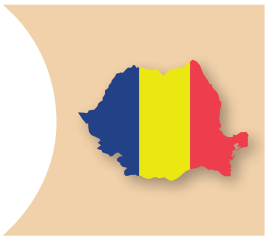
The Norwegian economy continues to perform well and is strengthening heading into 2018. The oil price has increased by 50 per cent in the last year and the crude oil price has again passed 70$. It is expected that investments will increase and an upturn in economic activity proceed. The unemployment rate in Norway is still generally low compared to other European countries.

There has been an ongoing strong momentum in the house price growth, especially in Oslo, in recent years. Price growth now appears to stabilize after a prolonged period of growth. There are some indications that market developments relative to housing starts is also slowing down slightly. Uncertainty regarding oil prices and the somewhat high debt burden of Norwegian home owners affect this. So too the central bank's signaling of policy rate increases.

However, the demand for buildings with wood as a material is highly increasing in all markets. There is, in particular, an increased demand for apartment buildings and other buildings that exceed four floors. Some of those who have traditionally not used wood now turn to wood as a preferred material. Through regulations and public procurement authorities have pulled the market in the direction of using more wood. The new government has also made increased use of wood in buildings a part of the political platform. There has been record high production of sawn wood in 2017. At the same time the export is increasing. In addition to high international demand for Norwegian saw logs and sawn timber, the comparatively low value of the Norwegian Krone contributes to the export level.

The situation regarding Norske Skog ASA resulted in the company filing for bankruptcy in December 2017. However, the production in Norway continues. Thus there is still demand for pulp and residues from forests and sawmilling in Norway. Norwegian wood industry continues to perform well. We see investments being made both in sawmills and other parts of the wood industry such as prefabrication, elements etc. The level of industrialization and automation is highly increasing, and digitalization is high on the agenda.

ROMANIA



Source: Associatia Forestielor Din Romania (ASFOR) and European Commission

General economic information

	2015	2016	2017	2018
Population *(million)*	19.9	19.9	19.6	19.5
GDP *(%)*	3.9	4.9	6.7	4.5
Inflation rate *(%)*	-0.4	-1.1	3.2	2.5
Unemployment rate *(%)*	6.8	6.0	4.6	4.0
Construction industry				
Buildings permits (units)	n.a.	n.a.	30 000	32 000
Housing starts (units)	n.a.	n.a.	17 500	15 000
Housing completions (units)	n.a.	n.a.	12 500	17 000
Wage development *(%)*	1.3	0.7	1.25	1.4
Average working time in sawmilling *(h/week)*	40	40	40	40

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	4 317	3 900	3 600	3 600
Imports	29	283	450	500
Exports	1 759	1 800	1 600	1 550
Consumption	2 529	2 383	2 450	2 550

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	1 795	1 700	1 600	1 600
Imports	29	125	25	25
Exports	726	800	800	800
Consumption	1 179	1 025	825	825

2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	3	3	3	3
Hardwood	3	3	3	3

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

Market statement

The volume of the exploited wood in 2017 (estimated) reached 17.898 m^3 of which 6.325 m^3 are represented by softwood and 11.573 m^3 by hardwood.

Following in the line of wood mass exploitation, one can notice a continuous increase of the standing timber prices which are rising from 148 Lei/m^3 in 2014 to 181 Lei/m^3 in 2017, having an annual increase of roughly 10%. Also, moulded wood recorded a similar tendency, rising from 274 Lei/m^3 in 2014 to 285 Lei/m^3 in 2017.

The decrease of the exploited volume in 2016 created a crisis of resource in the industrial sector of wood processing, simultaneously with the maintenance of prices which are not correlated with the evolutions on the international market, thus affecting the commercial competitiveness and indirectly influenced the general evolution in 2017.

Wood-processing industry is confronted with increased prices for wood mass as a result of difficult supplies and economic loss, with the addition of an overall scarce ability to supply enough firewood to consumers and raw materials for wood-based industries in general. The inclusion of furniture industry as a priority sector for strategic economic development determined a higher supply with resources dedicated to this field.

The over-regulation, the unfinished projects for SUMAL – Forest Radar – Forest Inspector - systems designed to be exclusively control-oriented, instead of becoming mostly informational ones that are meant to simplify reports, the forest regime control, the wood mass traceability and so on - have led to a series of difficulties on the chain of wood management and exploitation.

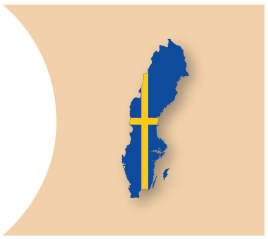
Direct beneficiaries consider that the wood industry has to pay the highest price for wood resources in Europe, respectively for beech wood, saw logs, namely 85-90 Euro/m^3.

The reduced volume of exploited wood, as a result of the crisis manifested during the wood mass auctions organised during the autumn of 2016, as well as the control measures and an excessive over-regulation, led to a lack of resource in the furniture industry, a loss of external commercial orders and a crisis of consumers supply with firewood.

As a direct consequence of all these tendencies, the structure and evolution of the production and the imports/exports of wood products, other than furniture, have been strongly influenced.

SWEDEN

Source: Swedish Forest Industries Federation, UNECE/FAO



General economic information

	2015	2016	2017	2018
Population *(million)*	9.9	10.0	10.1	10.2
GDP *(%)*	2.2	3.0	2.7	2.2
Inflation rate *(%)*	0.9	1.9	1.8	1.6
Unemployment rate *(%)*	7.4	6.9	6.7	6.6
Construction industry				
Buildings permits (units)	59 500	70 300	73 600	n.a.
Housing starts (units)	50 600	63 700	68 000	56 000
Housing completions (units)	42 400	53 600	n.a.	n.a.
Wage Development *(%)*	2.5	2.5	2.2	2.2
Average working time in sawmilling *(h/week)*	n.a.	n.a.	n.a.	n.a.

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	18 132	18 011	18 060	18 060
Imports	170	160	180	180
Exports	12 820	13 000	13 110	13 000
Consumption	5 253	5 555	5 553	5 400

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	100	100	100	100
Imports	28	42	39	39
Exports	4	19	10	10
Consumption	124	123	129	129

2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	3	3	3	3
Hardwood	-	-	-	-

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

Market statement

Sweden is the largest softwood exporter in Europe. 13 million cubic meters are exported of which 8 million cubic meters are shipped to Europe and 5 million cubic meters to markets outside Europe. Thus, the Swedish sawmills are highly dependent not only on the European but also on the global softwood markets. After ten years of recovery the global consumption of softwood is back on all-time high.

Today, the USA softwood market is by far largest contributor to the global increase in wood consumption, followed by China. European consumption is growing at a much lower but steady pace. The consumption in USA and Europe is driven mainly by increasing building activities, while the Chinese market is also driven to a high degree by growth in the furniture segment.

A continued good development on the two largest markets in the world - USA and China - will be crucial for how the softwood market - and thus the situation for Swedish sawmills - will develop during the coming year.

Swedish Sawn Softwood

2018 are estimates

	Unit	**2014**	**2015**	**2016**	**2017**	**2018**
Production	*1.000 m³*	17660	18132	18011	18060	18060
Imports	*1.000 m³*	149	170	160	180	180
Exports	*1.000 m³*	12314	12820	13000	13110	13000
Consumption	*1.000 m³*	4976	5253	5555	5553	5400

Swedish softwood production 2017

Despite the improving market conditions throughout last year Swedish softwood production remained practically unchanged at 18.06 million cubic meters.

This year has started with relatively low production. During the first quarter the production decreased by five *(prel)* per cent compared with the same period last year. The weather conditions and shortages in transport capacity have contributed to lower production than anticipated.

Because of low production and high demand, the stocks of softwood at sawmills have decreased to very low levels. The low production volumes during the first quarter means that the production will hardly increase during the whole year 2018. Our preliminary forecast is that the production will remain unchanged. This means that the Swedish production also this year will increase less than the global demand and that the level of production will still be well below the record from 2006. In 2006 the raw material supply was impacted by massive volumes of wind blown trees.

Exports 2017: Continued increase to East Asian markets, decrease to MENA

The table below shows the shipments from Swedish sawmills to different markets last year. The total export volume was 13.1 million cubic meters which was one per cent more than in 2016.

The export to **United Kingdom**, the largest export market, decreased slightly during 2017. The demand of Swedish softwood in UK remains healthy, even though the future has become somewhat more uncertain because of Brexit.

The European "quartet" **Germany, Denmark, Norway and the Netherlands** are all important markets for Swedish sawmills. All of them receive each year close to one million cubic meter of Swedish wood. These markets are all favoured by relatively healthy consumption growth driven by increasing construction activities.

Poland is the European market with the highest growth in exports from Sweden. Last year the increase amounted to 28 per cent.

Exports to the **North African and Middle East region** (mainly redwood markets for the Swedish sawmills) continued to decrease during last year. Algeria recorded the largest decline, with 45 per cent lower shipments. Other big markets for Swedish softwood such as Saudi Arabia, Morocco, Tunisia and Yemen all decreased in volume. On the other hand, exports to the largest African market **Egypt** increased by 13 per cent, after two years with declining volumes.

The East Asian markets are increasing, last year by 14 per cent. **China,** in particular, has had a fantastic development during the last six years, even though the volumes started to level out last year. Sweden is mainly exporting whitewood to the Chinese furniture industry.
Softwood exports to the USA increased last year by 65 per

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cent and reached 404.000 cubic meters. That is the highest exported volume from Sweden to USA since 2006.

With a softwood consumption of 5.6 million cubic meters **Sweden** is the single largest market for the Swedish sawmills. Demand is driven by strong housing activity. Housing starts climbed last year to their highest level since the early nineties (even though most of the increase in building activity has been on flats) and reached 69.000 units. The repair and maintenance activity remains on a stable level.

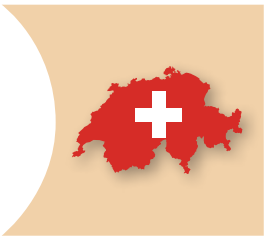
It seems like a peak in construction was reached last year, and the activity is now decreasing slightly from a high level. On the other hand, the share of multi storey houses built with wood is now increasing. For example, a number of investments in CLT-production is now under way in Sweden.

Swedish softwood shipments 2017

	Softwood (1000 m³)	Change compared with last year
Sweden	**5 380**	**+/-0**
United Kingdom	2 578	-5%
Germany	959	8%
The Netherlands	883	-7%
Denmark	859	-8%
Norway	1 002	5%
Other Europe	1 662	
Exports Europe	**7 943**	**+/-0%**
Egypt	1 285	13%
Algeria	312	-45%
Other Africa	579	
Middle East	476	-16%
Japan	841	8%
China	939	21%
Other Asia	265	
USA	404	65%
Other	648	
Total exports	**13 110**	**1%**
Total shipments	**18 483**	**0,50%**

SWITZERLAND

Source: Holzindustrie Schweiz



General economic information

	2015	2016	2017	2018
Population *(million)*	8.3	8.4	8.5	8.6
GDP *(%)*	0.8	1.3	1.0	2.4
Inflation rate *(%)*	-1.1	-0.4	0.5	0.2
Unemployment rate *(%)*	3.3	3.3	3.2	3.0
Construction industry				
Buildings permits (units)	49 150	48 000	50 500	n.a.
Housing starts (units)	n.a.	n.a.	n.a.	n.a.
Housing completions (units)	52 800	53 400	54 300	54 600
Wage Development *(%)*	0.4	0.6	0.3	0.5
Average working time in sawmilling *(h/week)*	42.5	42.5	42.5	42.5

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	1 089	1 074	1 095	1 095
Imports	345	348	340	300
Exports	176	190	200	200
Consumption	1 258	1 232	1 235	1 235

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	76	79	80	80
Imports	50	55	60	60
Exports	15	17	18	18
Consumption	111	117	122	122

2018 data are estimates

Availability of logs

	2015	2016	2017	2018
Softwood	4	4	4	4
Hardwood	3	3	3	3

(1 = low; 2 = medium low; 3 = normal; 4 = medium high; 5 = high)

Market statement

Sawnwood production in Switzerland was around 1.2 million m^3 (softwood+hardwood) in 2017 and is projected to remain stable in 2018. Exports of sawn softwood did particularly well, having recorded a 15% growth in the space of two years. In the course of 2017 the Swiss franc depreciated vis-à-vis the euro, and at the beginning of 2018 reached its weakest levels since 2015, boosting exporters. The franc, however, remains much stronger compared with the long-term average. Many exporters have also been able to take advantage of a stronger-than-expected Italian market, with sales to Italy back to satisfying levels. The packaging sector, in particular, stands out.

Positive developments are also taking place in the construction sector: after a weak performance in 2016, the Swiss building sector is undergoing a recovery this year and is set to gain further momentum in 2018 and 2019. Timber construction is gaining ground and attained a 14% market share across all types of buildings in 2016. At 40%, timber construction represents the largest share of the market in the agricultural category, and at 10% the smallest share in the leisure, sport and recreation category. A more accommodative policy environment (fire and safety regulations and new construction standards which entered into force in 2015) is fostering an uptake of the share of timber construction, especially in the field of multi-storey buildings.

The expectations for 2018 are high, though there is a feeling that sawmills overall will not increase too much production because they would not be able to place all by-products in the market: demand for chips and sawdust would not be high enough to absorb an increase of quantity. The competition of our neighboring countries remains strong.

Lately there have been challenges connected to the raw materials: the windfalls in January brought a large part of the yearly harvest on the market. Therefore, ongoing harvesting operations were stopped immediately. Due to long stocking period quality losses in logs are expected in summer. A long-term challenge – which also affects many other Central European countries – is the change in composition of forests species. The proportion of harvested wood accounted for by softwood has decreased from 74% in 2006 to 63% in 2016, and the proportion of hardwood has increased from 26% to 37%.

UNITED KINGDOM

Source: UNECE/FAO, European Commission and EUROCONSTRUCT

General economic information

	2015	2016	2017	2018
Population *(million)*	65.1	65.7	66.1	66.5
GDP *(%)*	2.3	1.8	1.7	1.5
Inflation rate *(%)*	0.0	0.7	2.7	2.6
Unemployment rate *(%)*	5.3	4.8	4.5	4.3
Construction industry				
Buildings permits (units)	n.a.	n.a.	n.a.	n.a.
Housing starts (units)	172 900	178 600	188 000	193 000
Housing completions (units)	166 300	164 600	175 000	177 000
Wage Development *(%)*	1.1	3.1	2.1	2.2
Average working time in sawmilling *(h/week)*	n.a.	n.a.	n.a.	n.a.

2018 data are estimates

Sawn Softwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	3 449	3 624	3 690	3 750
Imports	5 888	6 219	6 450	6 490
Exports	167	170	170	170
Consumption	9 170	9 677	9 960	10 060

2018 data are estimates

Sawn Hardwood (in 1,000 m^3)

	2015	2016	2017	2018
Production	44	47	50	50
Imports	338	330	330	330
Exports	17	20	20	20
Consumption	365	342	350	350

2018 data are estimates

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EOS expresses gratitude to Mr David Hopkins, Managing Director of the Timber Trade Federation, for his contribution to the EOS Annual Report 2017/2018.

Special Focus: The UK timber market

Despite Brexit uncertainty the UK timber market remains strong. But, for how long?

The UK has undergone some traumatic political & economic upheavals over the past couple of years. At the start of 2016 the UK was the fastest growing economy in the G7, hoping to throw off years of economy crippling austerity measures following the financial crash.

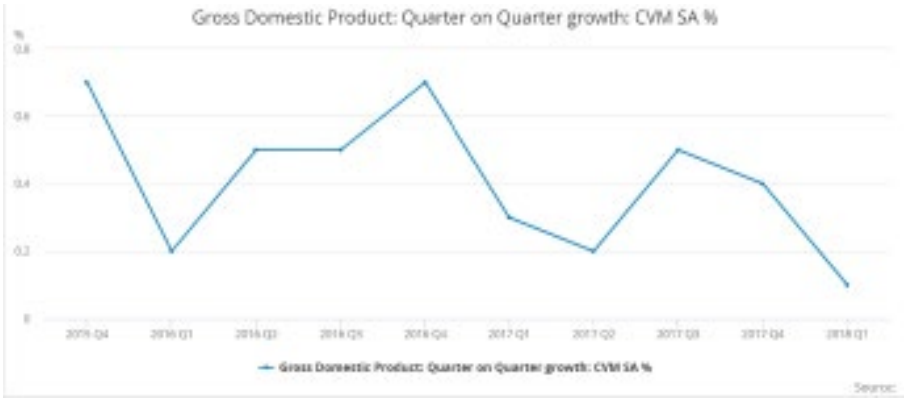
Then, in June 2016, came the referendum vote to leave the European Union (EU). Overnight the value of Sterling dropped to an all-time low, and has still not yet recovered. This pushed the price of imported goods up, causing runaway price inflation in many product sectors. And, during the course of the following 12-18 months, the UK went from the fastest growing G7 economy, to the slowest.

Economic Indicators

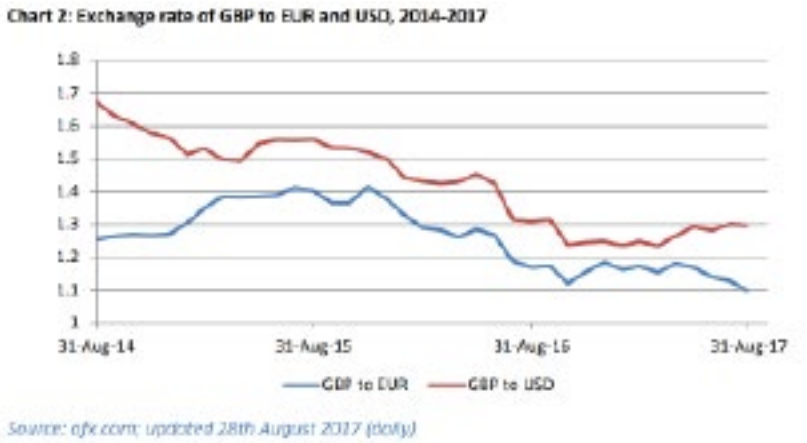
	2016	2017	2018	2019	2020
	Actual	Actual	Estimate	Forecast	Projection
GDP	1.9%	1.8%	1.3%	1.4%	1.9%
Fixed Investment	1.8%	4.0%	2.0%	3.0%	2.0%
Household Consumption	3.1%	1.7%	1.6%	1.8%	2.0%
Real Household Disposable Income	0.0%	0.3%	1.0%	1.2%	1.7%
Government Consumption	0.8%	0.1%	0.5%	0.4%	0.3%
CPI Inflation	0.7%	2.7%	2.5%	2.0%	2.0%
RPI Inflation	1.8%	3.6%	3.0%	2.7%	2.7%
Bank Base Rates - June	0.50%	0.25%	0.50%	0.75%	1.00%
Bank Base Rates - December	0.25%	0.50%	0.75%	1.00%	1.00%

Source: ONS, Construction Products Association

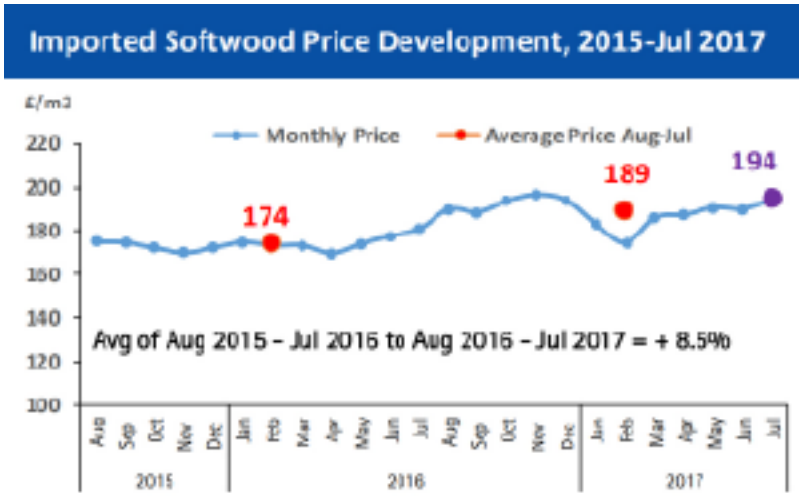
The UK's Retail Price Index (RPI) rate, which includes the house and general household prices, climbed from 1.8% in 2016 to 3.6% in 2017.



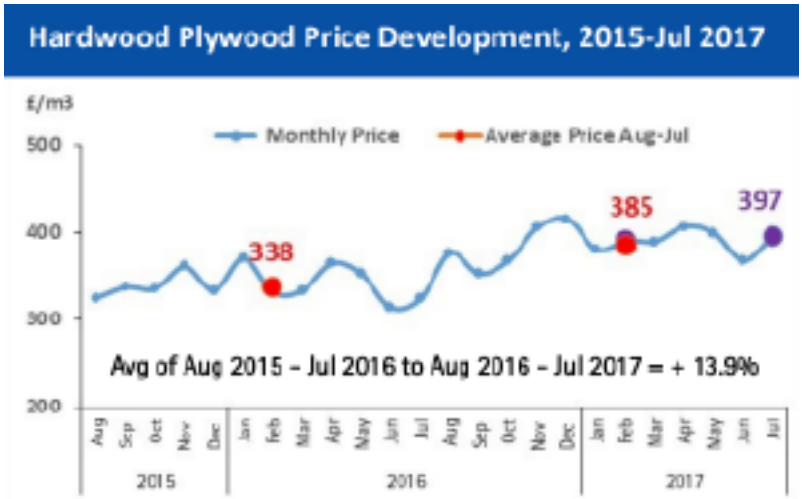
UK GDP dropped from 1.9% in 2016 to 1.3% in 2018, whilst the EU grew at approximately 2.8%



GBP to EUR falls from 1.4 in 2015 to 1.1 in 2017.



Imported Softwood prices have risen from 174 £/m³ at the start of 2016 to 194 £/m³ mid-2017.

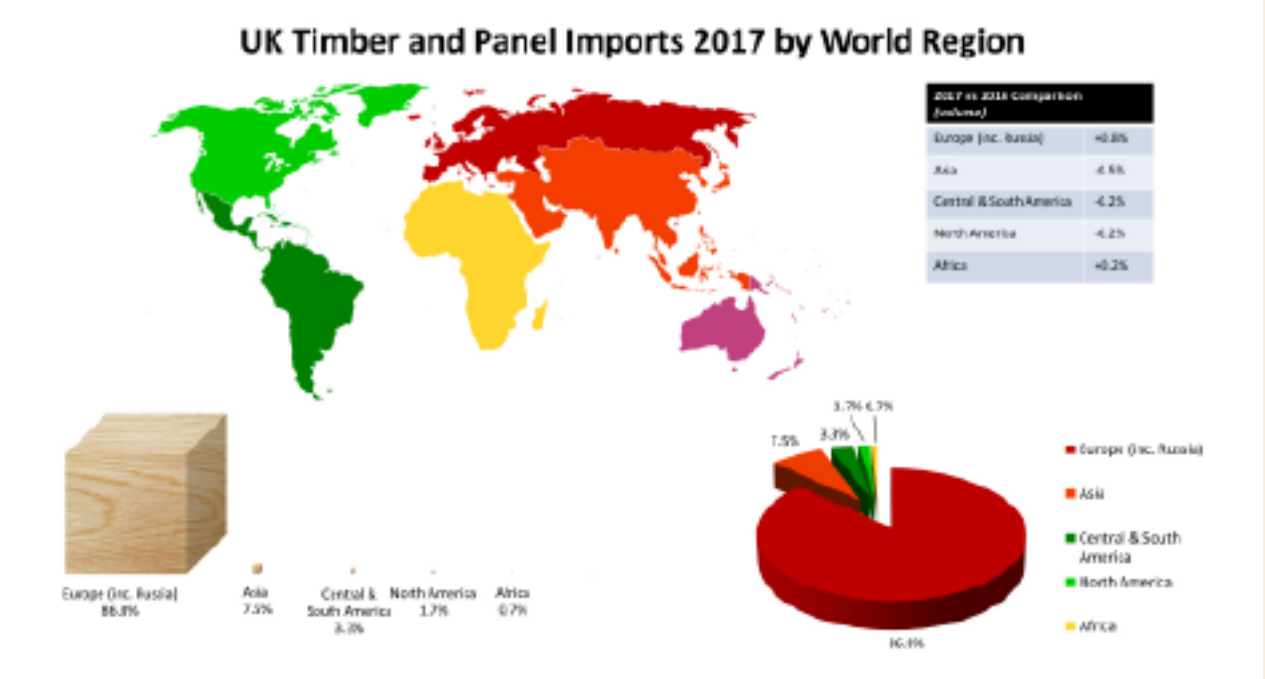


Imported Hardwood Plywood prices rose from 338 £/m³ at the start of 2016 to 385 £/m³ at the start of 2017.

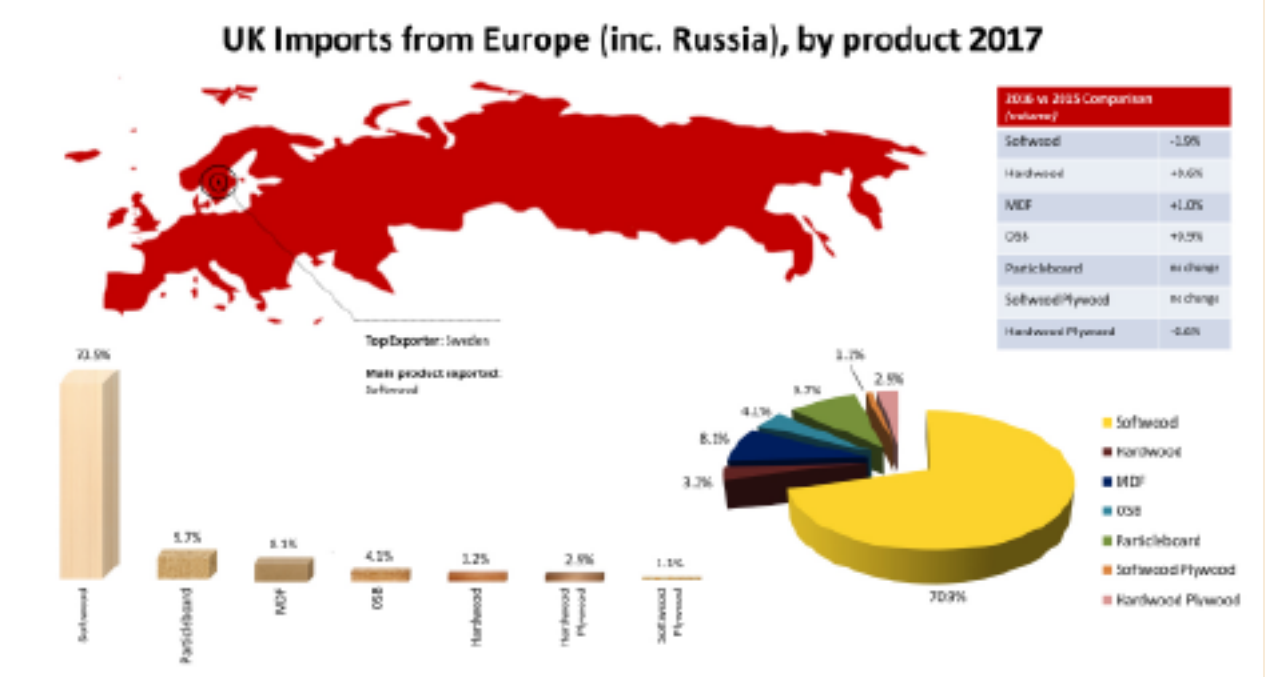
Whilst negotiations on the final outcomes of Brexit are still underway, the politically-volatile atmosphere and sense of uncertainty is causing negative impacts across the economy.

The lower value of Sterling against other currencies has pushed up import prices across all market sectors, including timber and timber products. Softwood imports have seen an average price rise of around 8.5% while Hardwood Plywood imports have seen price rises of 13.9% in the same period.

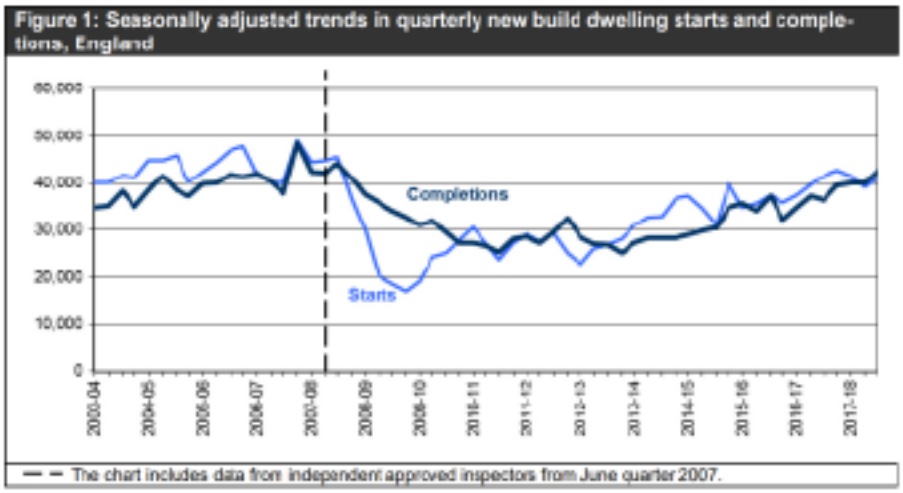
Despite the uncertain economy and the higher prices weighing heavily on UK importers' shoulders, the UK timber



In 2017, 86.8% of the UK's timber and panel imports were from Europe.



In 2017, 70.9% of UK imports were Softwood.



The number of new build properties in the UK have increased from roughly 30,000 in 2014/15 to over 40,000 in 2017/18.

Table 2.7 Consumption and production by UK sawmills, 2007-2016

Year	Softwood				Hardwood			
	consumption: thousand green tonnes, **production:** thousand m^3 sawnwood							
	Consumption of			Production	Consumption of			Production
	UK grown	Imported	Total		UK grown	Imported	Total	
2007	5 565	263	5 828	3 079	66	19	85	44
2008	4 933	174	5 107	2 755	66	20	86	44
2009	5 133	158	5 291	2 809	76	19	95	48
2010	5 616	103	5 719	3 053	75	19	94	48
2011	5 859	125	5 984	3 227	81	20	100	52
2012	6 073	124	6 198	3 361	75	17	93	48
2013	6 407	126	6 532	3 536	74	13	88	46
2014	6 725	159	6 884	3 716	77	14	91	47
2015	6 166	182	6 347	3 449	73	14	86	44
2016	6 511	209	6 720	3 624	75	17	92	47

Source: Sawmill Survey

UK Softwood and Hardwood production has improved over the past 10 years but the country's consumption outstrips supply reinforcing the need for imports.

sector has held up well since the referendum, showing an 8% increase in Softwood imports throughout 2017.

Over the 12-month period, solid wood imports were around 9% higher in 2017 than in 2016, while imports of Plywood and Panel Products were up by nearly 14%. Although, sawn and planed Softwood is running around 15% behind last year's statistics.

The UK remains highly dependent on the EU timber market, with over 70% of the UK's timber imports being sourced from EU countries, which is unlikely to change significantly in future years.

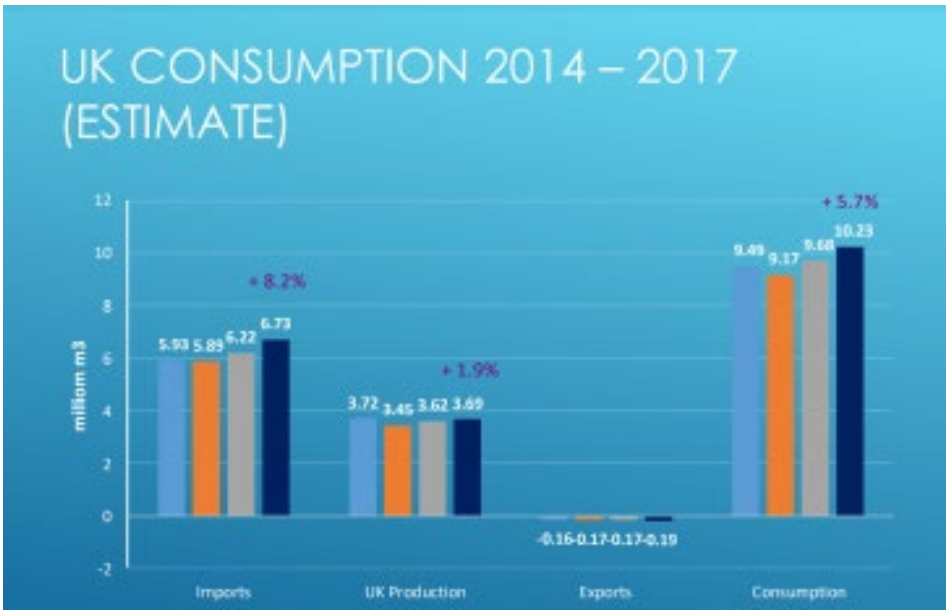
The UK's timber volumes and sales have held up mostly due to a strong housing market throughout the year. Policy measures such as "Help to Buy", a Government initiative to provide financial assistance for first-time buyers, and the new £3 billion "home building fund", a loans programme to help smaller to medium sized builders focus on housebuilding, have helped boost the supply of new housing in the UK, while the market for house extensions and improvements has also boosted sales of timber and timber products.

This increased demand for new housebuilding has led to a renewed interest in "offsite construction" to speed up build times, improve health and safety performance, and reduce costs. This again has helped drive demand for timber products as estimates suggest roughly 80 - 90% of all offsite systems in the UK are timber-based.

Figures for 2016 show that timber-frame construction accounted for 27% of the total new UK housing, or around 56,000 new homes.

Timber frame has also benefited from other factors such as lack of skilled onsite labour in the construction sector. This labour shortage is likely to get worse as the "Brexit effect" cuts deeper, meaning larger house builders will be looking at the advantages of building in timber frame more closely. In addition, newer products such as CLT and SIPS panel systems are also helping boost timber's share of the market.

Whilst the expansion of campaigns such as "Grown in Britain" – a non-profit organisation supporting British woods and forests - has renewed interest in homegrown timber, the UK

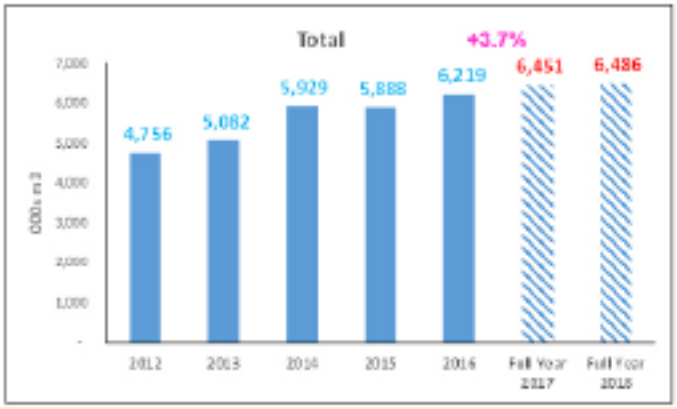


The UK has experieced negative growth in exports in 2016/17 whilst imports and consumption have risen.

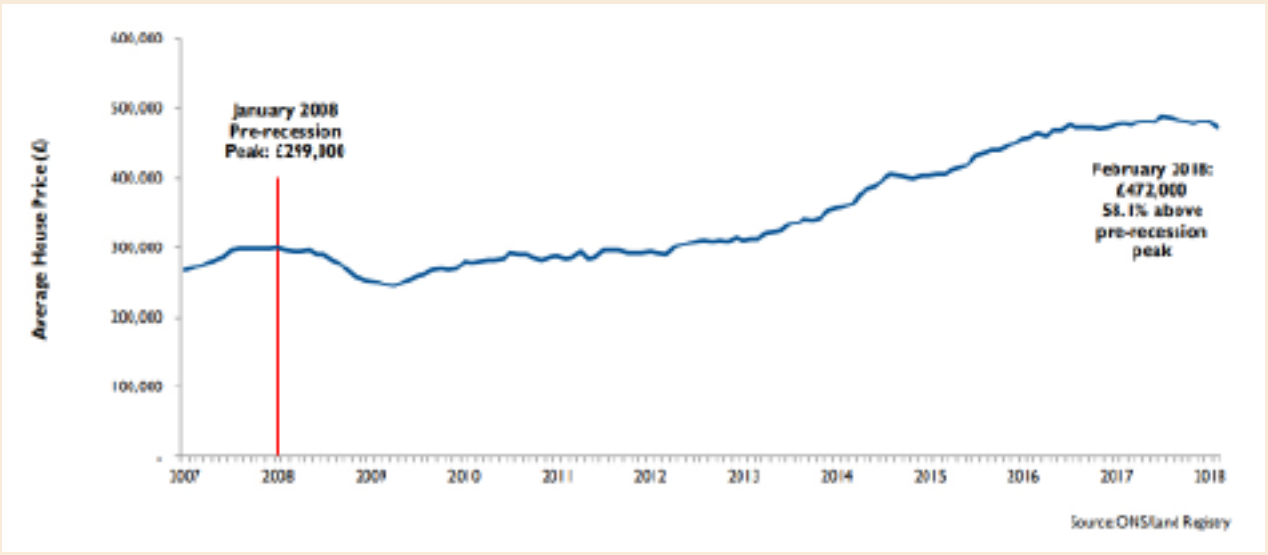
NSD Forecast in Perspective

000s m3

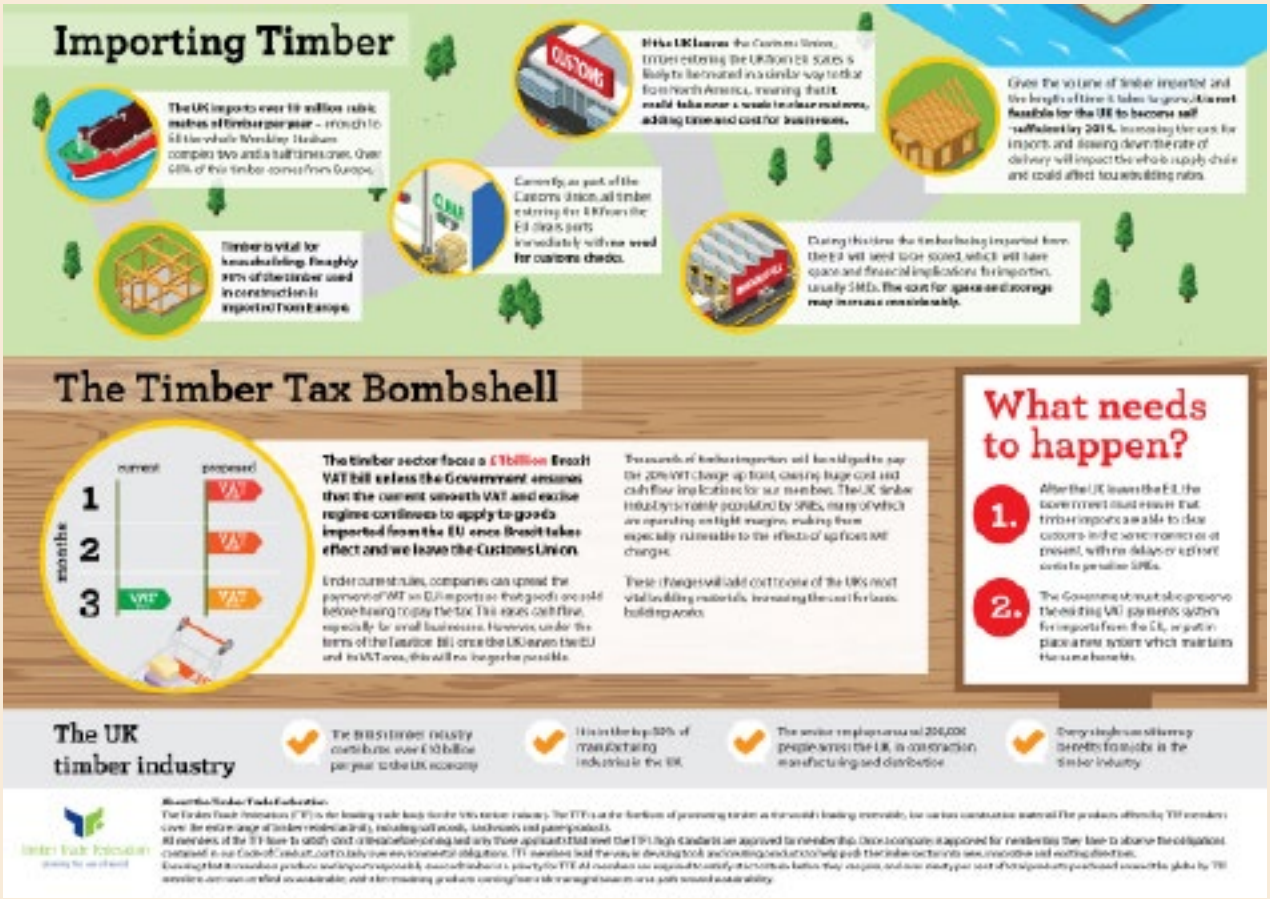
Actuals					NSD Forecast	NSD Forecast
2012	2013	2014	2015	2016	Full Year 2017	Full Year 2018
4,756	5,082	5,929	5,888	6,219	6,451	6,486



UK Softwood imports will see a rise in 2017 to 6,451 (000s m^3) but taking a slight dip in 2018 to 6,486 (000s m^3)



UK house prices have risen by 58.1% in the last 10 year to average £472,000 in 2018.



Timber Tax Bombshell

remains reliant on imports across all product categories.

The UK sawmill and processing sector has invested heavily in next generation facilities based on long-term forecasts, but there continues to be a significant and ongoing issue with availability of smaller logs traditionally cut for pallet wood and an uncompetitive pressure on prices.

So, what does the future look like for the UK timber sector?

Timber consumption in the UK largely follows GDP and construction sector growth patterns. The Construction Products Association predicted that construction output for the rest of 2018 will remain flat before accelerating to 2.7% in 2019 and 1.9% in 2020.

Whilst the UK Government is funding more new builds to boost housebuilding, the ongoing Brexit debacle could mean the timber sector will face a £1 billion Brexit VAT bill unless the Government ensures that the current Customs Union regime continues to apply to all goods imported from the EU. This would have severe impacts on the cash flow of many importers and is a cause for concern. The TTF continues to lobby parliament to make our case heard and is briefing politicians from all sides of the debate. We are hoping that sanity will prevail, but with British politicians you can never be sure!

With less than a year before the UK is due to leave membership of the EU, the uncertainty of final Brexit and Custom Union decisions make it harder to predict the future of the UK timber market. The immediate short-term outlook is bleak, but the long term demand and outlook for the housebuilding and construction sector means the UK will remain a strong market for the timber trade.

Special Focus: the European Sawmill Industry in 2018

During the third EOS Board Meeting of 2017 held in October 2017, the Board Members expressed an interest in defining the European Sawmill Industry structure. There was a feeling that the industry is undergoing change and that old assumptions could be dispelled as a result of structural changes in the market. That hunch proved correct: sawmilling in 2018 is not was it was twenty or ten years ago. Many sawmills are more and more involved in value-adding activities and many larger sawmills are getting more export-oriented.

The EOS Secretariat was tasked to survey the EOS Members by submitting a set of questions which have been answered either in written form or in a phone call. The countries which participated in this information collection are Austria, Belgium, Denmark, Finland, France, Germany, Latvia, Norway, Romania, Sweden, Switzerland.

***Nota bene*:** in this document terms such as "small" and "big" sawmills (or synonyms) will often appear. Unless clearly specified, these definitions do not refer to the internationally utilized ones. They are instead relative to the other sawmills and to the average size of the sector, which is mostly made up by micro enterprises, according to the internationally utilized definitions. The European Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises indeed classifies enterprises in the following way:

- Micro Enterprises: fewer than 10 persons employed and turnover ≤ € 2 m;
- Small Enterprises: 10 to 49 persons employed and turnover ≤ € 10 m
- Medium Enterprises: 50 to 249 persons employed and turnover ≤ € 50 m
- Large Enterprises more than 249 persons employed

1 Traditional sawmilling is defined as grading, and sorting and processing of logs.

Key data

There were almost 34,000 sawmills in the EU28 in 2016 (plus around 250 in Switzerland, and 700 in Norway) – down from around 40,000 in 2010. According to Eurostat, out of 34,000 sawmills around 29,250 are classifiable as micro enterprises, around 4,250 are classifiable as small enterprises, around 630 are classifiable as medium enterprises, and around 60 are classifiable as larger enterprises.

Sawmilling in 2018: first evidence

While there are some sawmills which process both hardwood and softwood logs, most are specialized in the processing of either softwood or hardwood species. Based on the latest available data (2017), the EOS members produced around 80 million m^3 of sawn softwood and 5.5 million m^3 of sawn hardwood. Thus, sawn softwood production accounts for around 93.5% of the total EOS production, while sawn hardwood production accounts for the remaining 6.5%. In general, hardwood sawmills tend to be smaller than softwood sawmills.

Based on the information received, in general, across Europe there are less traditional[1] sawmills (precise data missing for some countries) than in the past – even when we compared figures with ten years ago. In France

around 30% of sawmills can still be defined as traditional sawmills. However, there are still many small, family-size sawmills that employ a significant amount of people in many countries. The share of the logs processed in such sawmills as a total of the logs processed across Europe is getting lower.

Sawmills are more and more involved in value-adding activities such as planing, finger-jointing and impregnation. Window-scantling production is a more peripheral activity, and furniture-making is even rarer. For instance, in Germany 82.5% of the companies produce planed timber. In France around 70% of sawmills produce value-added products. In Belgium around 20% of sawmills produce value added products, the bigger ones and some smaller ones, too. In Austria 10%, which are however responsible for 90% of the production volume. In Romania, around 20%, with smaller companies the least likely to produce value added products.

Selling **BY-PRODUCTS** is an integral part of the sawmill industry's business model. In some countries there is a relatively balanced situation when it comes to selling by-products. Other countries, such as Finland, Denmark, Norway, are finding it a little more difficult to place them in the markets. Pellets production in general is not a very widespread activity but there are big differences across Europe. At any rate, pellets production is generally growing, for instance in Sweden. Few Austrian sawmills produce pellets, but that output accounts for 90% of total Austrian production. In Latvia specialized pellets producers prevail but more and more sawmills use pellets machinery to produce pellets. In Belgium the four bigger sawmills of the country produce pellets, while in France and Romania around 2% of sawmills produce pellets.

Forest ownership is a marginal phenomenon, which is often restricted to bigger companies; there are few sawmills which own forests in Switzerland and in Sweden, but in other countries such as Finland and Belgium no sawmills own forests. Forest ownership is slightly more widespread in France, where around 10% of sawmills own forests. 2% of German sawmills have joint-ventures with forest owners. In Romania, overall, medium enterprises (as per the internationally utilized definition) are the ones more likely to own forests and be involved in harvesting activities. Many sawmills are involved in wood procurement, and some of them transport raw material to the mills.

Some sawmills are involved in the transportation of products from mills to buyers, but there are significant differences across Europe (no or very few transport their products in Finland, Latvia, some in Sweden, around 35-40% in Belgium, around 50% in France, many in Switzerland and Norway), while few sawmills own builders' merchants' chains (for instance in Sweden, in Romania, in Switzerland, and in France; in Latvia some own their shops where they sell products). In Finland there are nowadays no sawmills builders' merchants' chains.

Emerging trends:

Larger sawmills are further expanding their processing operations and tend to be more focused on value-adding products. Smaller sawmills tend to be more focused on traditional sawmilling. This, however, shouldn't be a sweeping generalization as there are smaller sawmills focusing on value-adding products and some bigger sawmills remained traditional sawmills.

While the production of the sector is overall expanding (the softwood sector's production is growing, while the hardwood sector production is stagnating), more output is achieved with less personnel and with less sawmills. In Belgium there is a clear difference between hardwood and softwood producers, with much more hardwood mills having shut down over the past decade. In Austria the 10 largest sawmills process 60% of logs, while in Latvia the 13 largest sawmills process 80% of logs. There is therefore a trend towards consolidation (with some exceptions), but this is taking place quite slowly. In Southern Germany an estimated 40% of small businesses have shut down over the last 10 years. In France the sector lost around 25% of sawmills in 10 years. Sawmills can grow through takeovers or organic growth.

However, with some exceptions such as Denmark and Latvia (in which smaller sawmills tend to be less profitable), size doesn't usually define sawmills' profitability. Smaller sawmills concentrated on own markets which sometimes operate in niches and can customize products can also be successful. There are therefore smaller sawmills which can actually be more profitable than bigger sawmills.

Norway emphasized that it is management rather than size that defines profitability. Bigger sawmills tend to be more export-oriented while smaller sawmills are more prone to service their local markets. This is generally true across all EOS countries. While extra-European markets are becoming more and more important for many sawmills scattered across Europe, for many sawmills the main focus markets remain the local and European markets.

5. The Construction Industry in Europe

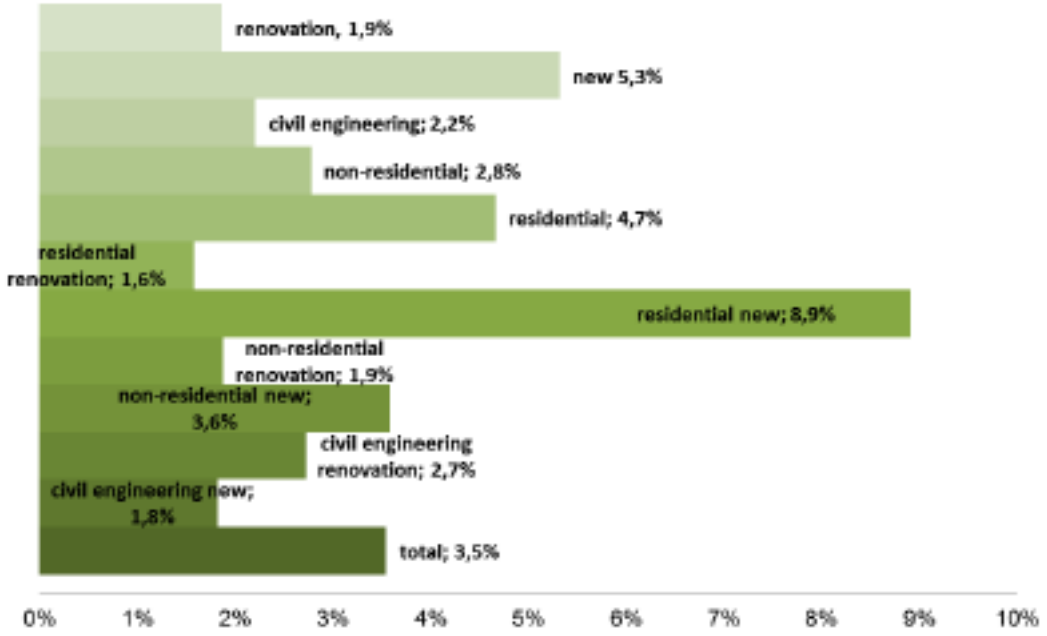
EOS expresses gratitude to Mr Orifjon Abidov, Economic Adviser of EPF (European Panel Federation) for his kind contribution to this EOS Annual Report Chapter. The information provided is a re-elaboration of the 84th Edition of the EUROCONSTRUCT Country Report.

In 2017, the European construction activity measured by the construction output according to Euroconstruct registered an increase for the fourth year in a row of 3.5% in comparison with 2016. The construction market was characterised by two major developments in 2017. Firstly, the growth in construction activity reached the highest level since the 2008-2009 global financial crisis. Secondly, the construction output increased in all countries (members of Euroconstruct) last year. The growth in Eastern Europe reached 8.6% partly thanks to the availability of EU funds in the majority of countries which pulled up the non-residential and civil engineering construction activities. In Western Europe, the construction output moved up by 3.3% in 2017.

The favourable construction output was driven by economic growth, which had positive implications for household income, corporate profits and the state of public finances. In addition, the low interest rate and the investment backlog, that has accumulated in areas like infrastructure, allowed the upturn in the construction activity in 2017. On the other hand, the public sector's scope to take action was limited, which translated into a cautious approach to taxation and subsidy policy from several European countries. Factors such as high vacancies rate and/or excessively high real estate prices prevented a stronger upturn in construction output.

After increasing by a total of 9% between 2014 and 2017, the construction output is expected to grow further by 6% by 2020. However, there is still a lot to recover from the pre-crisis level with the construction output in 2020 still forecast to be 15% below the 2007 peak.

Figure 5.1: Growth rates of the different segments of the European construction market, 2017



Source: Euroconstruct

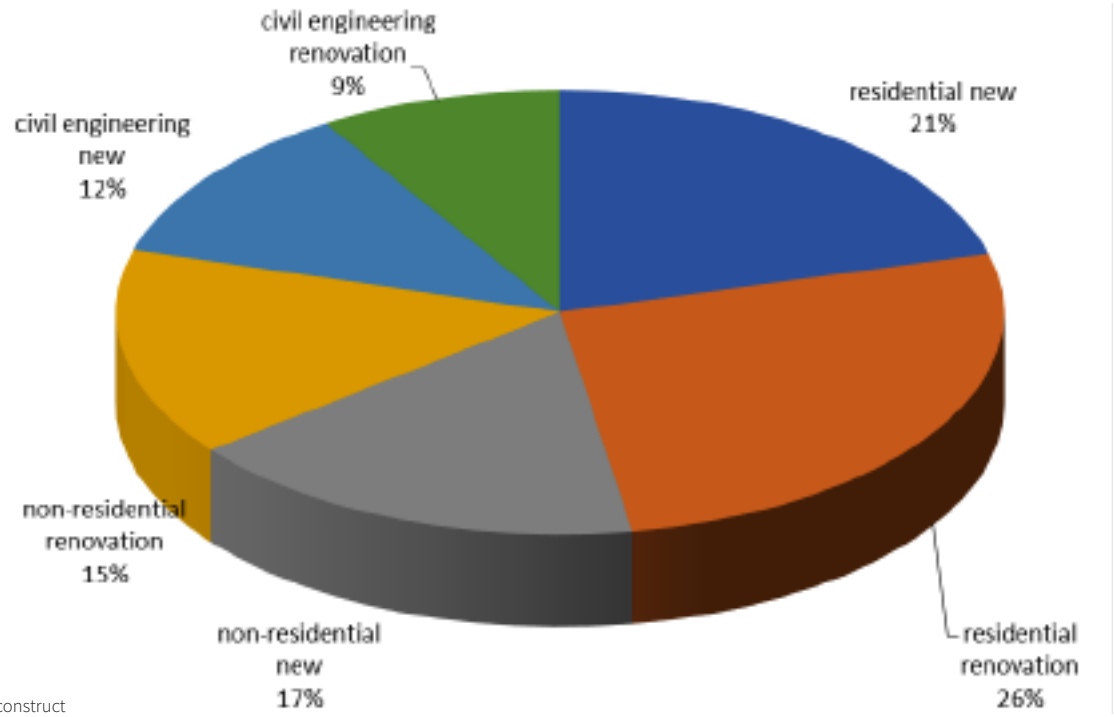
Table 5.1: Overview of the construction industry in Western and Eastern Europe in million EUR in 2016 and 2017

	total construction*			new residential			residential renovation			new non-residential			non-residential renovation			new civil engineering			civil renovation		
	2016	2017	%	2016	2017	%	2016	2017	%	2016	2017	%	2016	2017	%	2016	2017	%	2016	2017	%
Austria	38.532	39.613	2,8%	11.278	11.526	2,2%	4.968	5.052	1,7%	11.019	11.438	3,8%	3.468	3.548	2,3%	6.239	6.457	3,5%	1.560	1.591	2,0%
Belgium	43.173	44.255	2,5%	8.700	8.865	1,9%	11.882	12.227	2,9%	9.387	9.303	-0,9%	6.310	6.493	2,9%	5.081	5.518	8,6%	1.813	1.849	2,0%
Denmark	30.113	30.705	2,0%	2.990	3.379	13,0%	11.618	11.850	2,0%	4.031	4.136	2,6%	3.495	3.565	2,0%	4.982	4.718	-5,3%	2.997	3.057	2,0%
Finland	32.052	33.188	3,5%	6.008	6.789	13,0%	7.652	7.805	2,0%	6.843	7.069	3,3%	4.930	5.004	1,5%	4.905	4.758	-3,0%	1.714	1.764	2,9%
France	205.530	212.862	3,6%	39.343	43.513	10,6%	60.543	61.451	1,5%	27.793	28.905	4,0%	34.567	35.189	1,8%	19.478	19.712	1,2%	23.806	24.092	1,2%
Germany	310.254	318.199	2,6%	57.017	62.149	9,0%	118.420	118.420	0,0%	31.892	32.530	2,0%	49.674	50.419	1,5%	28.862	29.439	2,0%	24.389	25.243	3,5%
Ireland	15.198	17.412	14,6%	4.213	5.654	34,2%	3.228	3.454	7,0%	3.448	4.003	16,1%	448	464	3,6%	3.199	3.148	-1,6%	662	689	4,1%
Italy	163.504	165.099	1,0%	14.154	14.451	2,1%	67.430	68.374	1,4%	14.951	15.220	1,8%	32.419	32.840	1,3%	12.730	11.673	-8,3%	21.820	22.540	3,3%
Netherlands	71.461	75.323	5,4%	10.987	12.415	13,0%	17.408	18.365	5,5%	10.466	11.178	6,8%	11.069	11.412	3,1%	13.911	14.203	2,1%	7.620	7.750	1,7%
Norway	45.547	48.629	6,8%	9.711	11.051	13,8%	7.895	8.171	3,5%	6.857	7.193	4,9%	8.420	8.580	1,9%	8.474	9.347	10,3%	4.190	4.286	2,3%
Portugal	14.760	15.648	6,0%	2.188	2.297	5,0%	4.391	4.786	9,0%	2.721	2.830	4,0%	1.153	1.188	3,0%	3.395	3.599	6,0%	912	948	4,0%
Spain	93.930	97.729	4,0%	25.670	29.264	14,0%	16.685	17.186	3,0%	17.810	18.522	4,0%	12.990	13.315	2,5%	14.330	12.610	-12,0%	6.445	6.832	6,0%
Sweden	39.732	43.657	9,9%	9.834	12.174	23,8%	7.798	7.743	-0,7%	5.919	6.967	17,7%	6.195	6.282	1,4%	6.476	6.903	6,6%	3.510	3.587	2,2%
Switzerland	63.625	64.664	1,6%	21.324	21.601	1,3%	8.016	8.096	1,0%	9.098	9.289	2,1%	11.253	11.534	2,5%	4.786	4.858	1,5%	9.148	9.285	1,5%
UK	210.187	215.791	2,7%	49.155	50.777	3,3%	39.960	41.039	2,7%	63.864	65.141	2,0%	24.178	24.347	0,7%	22.517	23.868	6,0%	10.513	10.618	1,0%
Total Western Europe	**1.377.598**	**1.422.773**	**3,3%**	**272.572**	**295.907**	**8,6%**	**387.894**	**394.021**	**1,6%**	**226.099**	**233.723**	**3,4%**	**210.569**	**214.180**	**1,7%**	**159.365**	**160.812**	**0,9%**	**121.099**	**124.131**	**2,5%**
Czech Republic	16.169	16.429	1,6%	3.145	3.793	20,6%	837	803	-4,1%	4.915	4.974	1,2%	2.561	2.512	-1,9%	2.421	2.092	-13,6%	2.290	2.256	-1,5%
Hungary	7.900	9.913	25,5%	850	1.530	80,0%	1.250	1.313	5,0%	1.900	2.090	10,0%	1.800	2.250	25,0%	1.100	1.430	30,0%	1.000	1.300	30,0%
Poland	44.936	48.835	8,7%	9.431	10.299	9,2%	3.274	3.353	2,4%	11.767	12.708	8,0%	7.851	8.024	2,2%	7.731	9.355	21,0%	4.882	5.097	4,4%
Slovak Republic	4.615	4.758	3,1%	683	725	6,1%	466	460	-1,2%	1.352	1.379	2,0%	663	680	2,6%	1.254	1.304	4,0%	197	210	6,4%
Total Eastern Europe	**73.620**	**79.935**	**8,6%**	**14.109**	**16.346**	**15,9%**	**5.827**	**5.928**	**1,7%**	**19.934**	**21.151**	**6,1%**	**12.875**	**13.466**	**4,6%**	**12.506**	**14.180**	**13,4%**	**8.369**	**8.862**	**5,9%**
Total Europe	**1.451.218**	**1.502.707**	**3,5%**	**286.681**	**312.253**	**8,9%**	**393.721**	**399.949**	**1,6%**	**246.033**	**254.874**	**3,6%**	**223.444**	**227.647**	**1,9%**	**171.871**	**174.992**	**1,8%**	**129.468**	**132.993**	**2,7%**

Source: Euroconstruct

* total construction also includes services/construction by other sectors, DIY, black economy

Figure 5.2: Relative share of the different segments in the overall construction market in Europe, 2017



Source: Euroconstruct

In Eastern Europe, all four countries, members of Euroconstruct, registered an increase with Hungary registering the largest growth (+25.5%) followed by Poland (+8.7%). In Western Europe, building activity increased significantly in Ireland for the fourth consecutive year (+14.6%, though coming from a very low level), Sweden (+9.9%), Norway (+6.8%), Portugal (6%), the Netherlands (+5.4%) and Spain (+4%), with also the Iberian Peninsula recovering from very low levels. The two countries registering only small gains were Switzerland (+1.6%) and Italy (+1%), especially the continuation of recovery in Italy being encouraging The other countries of the region registered a more stable situation with a growth of their construction output between 2.5% and 3.6%.

The "new construction" sub-segments registered the largest increase of 5.3% when compared with "renovation" (+1.9%). The "new residential" segment showed the largest progression with +8.9%, followed by "non residential new" at +3.6%.

With a stable share of 47%, residential construction remains the building sector's main branch. Non-residential buildings rank second, accounting for 32%, while civil engineering projects account for the remaining 21%.

Residential Construction

Following the moderate growth of 3.9% in 2016, the total residential construction is estimated to have grown by a further of 4.7% in 2017 thanks to the growth registered in all countries. Growth is considerably higher in Eastern Europe (+11.7%) than in Western Europe (+4.4%), but since the volume of construction in euro terms is much smaller in Eastern Europe, 93% of the total European growth in residential construction came from the Western area. Although at a decelerating pace, the outlook is quite positive with residential building activity projected to continue to increase by +2.4% in 2018, +1.7% in 2019 and +1.1% in 2020, again with Eastern Europe registering the brightest increases. At national level, in 2018, residential construction is forecast to grow in all 19 countries that are members of Euroconstruct, although with widely different growth rates, as new construction growth rates vary from +0.1% in Norway to 40% in Hungary. Except Hungary, in all countries, the growth rate is expected to be lower in 2018 than in 2017, pulling the average growth rate considerably down. In 2019, the growth rates are expected to stay positive with exception of Finland, Norway, Slovakia and Sweden where the residential construction is predicted to contract ranging

Table 5.2: Total residential construction volume in Europe in million EUR and annual increases, 2016-2020

Total volume x million EUR		% change			
(current prices)	**2016**	**2017***	**2018****	**2019****	**2020****
Austria	16.246	2,0	1,5	1,3	1,1
Belgium	20.582	2,5	2,6	1,7	3,1
Denmark	14.607	4,3	3,3	3,8	3,1
Finland	13.660	6,8	0,3	-0,8	-2,1
France	99.886	5,1	3,0	2,1	0,6
Germany	175.438	2,9	1,0	0,2	-0,4
Ireland	7.440	22,4	18,7	15,9	12,9
Italy	81.583	1,5	1,4	1,1	1,3
Netherlands	28.394	8,4	4,0	2,8	2,4
Norway	17.605	9,2	0,1	-2,6	0,6
Portugal	6.579	7,7	7,0	7,4	6,4
Spain	42.355	9,7	5,0	4,7	4,3
Sweden	17.632	12,9	2,3	-4,2	-5,1
Switzerland	29.340	1,2	0,5	0,2	-0,8
UK	89.115	3,0	1,4	2,5	1,4
Total Western Europe	**660.462**	**4,4**	**2,2**	**1,6**	**1,0**
Czech Republic	3.982	15,4	9,4	5,4	4,1
Hungary	2.100	35,4	39,8	8,1	-7,8
Poland	12.705	7,4	5,2	2,8	4,1
Slovak Republic	1.149	3,2	1,8	-1,7	-1,3
Total Eastern Europe	**19.936**	**11,7**	**10,3**	**4,0**	**1,8**
Total Europe	**680.398**	**4,7**	**2,4**	**1,7**	**1,1**

* estimate
** forecast
Source: Euroconstruct

from 0.8% to 4.2% with the decline in activity foreseen for 2020 as well. In 2020, activity following trend is forecast for Hungary where 8.1% growth in 2019 is forecast to turn into a contraction of 7.8% in 2020. Another significant change is a trend reversal in Sweden, where 2.3% growth of total residential construction in 2018 is predicted to turn into contraction in 2019-2020 (-4.7% per annum).

The number of completions of new single and two-family dwellings upturned strongly in 2017 with 8.2% growth. In the following years, the upturn is expected to slow down significantly from 2.7% in 2018 to 0.7% in 2020. The largest market for finished one and two-family dwellings in Europe is France with 22% of market share in 2017 or 154,100 units. The completion of one and two-family dwellings is expected to peak at 164,000 units in 2019 but to contract slightly in 2020 in France. Germany is the second largest market in this segment with 16% of market share in 2017 or 110,000 units.

Table 5.3: Finished single and two-family dwellings forecasts for the Western and Eastern European countries x 1,000 dwellings, 2016-2020

	2016	2017*	2018**	2019**	2020**
Austria	16,6	17,2	17,5	17,6	17,8
Belgium	18,1	19,0	17,3	19,1	18,5
Denmark	6,3	7,0	7,5	8,0	9,0
Finland	7,1	7,3	8,0	8,2	8,0
France	144,2	154,1	159,2	163,6	158,2
Germany	106,3	110,0	105,0	105,0	100,0
Ireland	12,6	15,8	20,1	24,3	28,5
Italy	29,3	29,6	30,6	31,2	31,9
Netherlands	33,2	41,0	41,0	41,0	46,0
Norway	10,8	12,2	13,0	12,3	11,7
Portugal	4,8	5,4	6,2	8,0	10,5
Spain	10,0	13,0	16,5	17,5	18,0
Sweden	16,1	18,4	16,4	15,9	13,8
Switzerland	7,2	7,0	6,8	6,6	6,4
UK	123,4	132,9	135,0	138,9	145,1
Western Europe	**546,0**	**589,9**	**600,1**	**617,2**	**623,4**
Czech Republic	15,4	15,5	17,2	18,9	20,3
Hungary	4,9	8,0	10,0	11,0	9,0
Poland	78,1	84,0	90,0	95,0	95,0
Slovak Republic	11,2	12,0	11,5	11,0	10,5
Eastern Europe	**109,6**	**119,5**	**128,7**	**135,9**	**134,8**
Total Europe	**655,6**	**709,4**	**728,8**	**753,1**	**758,2**

* estimate
** forecast
Source: Euroconstruct

In 2018, the completion of single and two-family dwellings in Germany is likely to decline before remaining stable in 2019 and contract again in 2020. Nonetheless, finished single and two-family homes are expected to be substantial drivers for growth in wood-based panel consumption in the next years.

The turnaround for completions of flats came already in 2014 after the very poor showing in the previous years. The number of finished flats continued to post a double-digit growth in 2017 (14.6%) with Eastern Europe even registering a growth of 19.3%, while Western Europe achieved 13.9%.

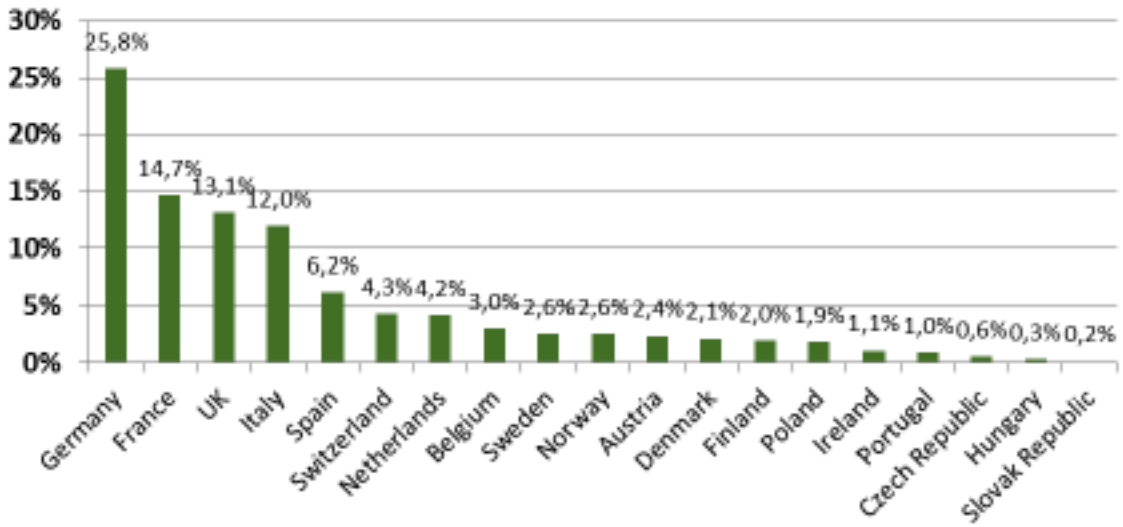
Despite declining growth rates in 2018-2019, the total number of finished flats in Europe is projected to register an impressive increase from nearly 900,000 units in 2017 up to over one million dwellings (+14.3%) in 2019. However, the growth in 2020 is forecast to halt with Western Europe registering a flat development, while Eastern Europe would be contracting slightly which means that at the European level the number of finished flats is forecast to decline by 0.6%. From 2017 to 2020, the share of flats versus share of one and two-family dwellings in completions is forecast to rise in 14 of the 19 countries. The largest relative changes

Table 5.4: Finished flats forecast for the Western and Eastern European countries x 1,000 dwellings, 2016-2020

	2016	2017*	2018**	2019**	2020**
Austria	31,7	33,3	34,9	35,5	35,9
Belgium	27,0	29,1	27,5	30,3	29,4
Denmark	12,5	15,0	16,0	17,5	18,0
Finland	23,2	29,2	32,0	27,8	23,0
France	190,9	221,5	240,8	252,5	250,3
Germany	129,4	150,0	170,0	175,0	175,0
Ireland	2,3	3,0	3,9	4,7	5,5
Italy	52,4	51,0	52,5	53,7	55,0
Netherlands	21,7	25,0	26,0	27,0	28,0
Norway	18,6	21,8	24,3	23,2	21,3
Portugal	2,5	3,0	3,9	5,1	5,9
Spain	30,1	42,0	53,5	62,5	72,0
Sweden	37,5	46,6	58,5	57,8	55,3
Switzerland	46,2	47,3	47,9	48,3	48,0
UK	41,2	42,2	42,0	43,1	42,9
Western Europe	**667,2**	**760,0**	**833,7**	**864,0**	**865,5**
Czech Republic	12,0	13,2	11,7	12,2	13,6
Hungary	5,1	10,0	20,0	24,0	20,0
Poland	85,3	98,0	110,0	115,0	110,0
Slovak Republic	4,5	6,3	6,6	6,3	5,8
Eastern Europe	**106,9**	**127,5**	**148,3**	**157,5**	**149,4**
Total Europe	**774,1**	**887,5**	**982,0**	**1.021,5**	**1.014,9**

* estimate
** forecast
Source: Euroconstruct

Figure 5.3: Relative share of the Western and Eastern European countries in the overall residential construction market, 2017



occur in Hungary, where the share of flats in completions rises from 51% in 2016 to 69% in 2019. In other countries, the change is below 10 percentage points, and in 12 countries less than 3 percentage points. In addition to Hungary, the share grows very considerably in Germany and Sweden. However, the trend is the opposite in Finland, Italy, Netherlands, the UK, and the Czech Republic, which are all forecast to have somewhat growing shares of one and two-family housing.

Germany represents about 26% of the overall residential construction market in Europe in 2017 according to Euroconstruct (see Figure 5.3), followed by France (14.7%), the United Kingdom (13.1%), Italy (12%) and Spain (6.2%). Together those five countries represent 72% of the overall residential construction market in Europe in 2017. The other European countries hold a share of maximum 4.5%.

New residential construction has the strongest growth rate in 2017 with 8.9% and also the strongest forecast but is recovering from a deep recession. In Western Europe, except in Austria (+2.2%), Belgium (+1.9%), Italy (+2.1%), Switzerland (+1.3%) and the UK (+3.3%) the new residential construction posted a double-digit growth in other countries. In Eastern Europe, Czech Republic (+20.6%) and Hungary (+80%) registered the strongest growth in 2017. Of all European countries, the most significant progression is reported for Ireland (+34.2%) and Hungary, though recovering from very low levels.

Housing renovation is not expected to grow as fast, but records healthy production levels currently. An improvement of 1.6% for Europe as a whole as well as for Western Europe in 2017 was estimated. Activity in this sub-segment rose by 1.7% in Eastern Europe. In 2018, renovation is expected to outreach the peaks of historical pick reached a year earlier and to hit new record levels.

So far European households are enjoying better access to credit and in some countries, they benefit from state support in the form of various programs to encourage access to housing. The recovery in house prices gives positive signals to investments, but it also tends to overheat the market. Investors are becoming more active in new building developments. The influx of refugees has been increasing the pressure to rapidly provide accommodation in countries like Germany and Norway.

Non-Residential Construction

After posting a mild growth of 1.5% in 2016, the non-residential construction segment increased further in 2017 registering an estimated growth of 2.8%. Western Europe posted a lower growth (+2.6%) compared to Eastern Europe (+5.5%), although 86% of European growth in euro term came from Western Europe. The new sub-segment of the non-residential sector grew by 3.6%, while the renovation posted just 1.9% growth in 2017. The new segment is in the very early stages of recovery and benefitted from improved economic conditions in Europe and the return of EU funds in Eastern Europe. However, declining growth prospects for economy, the cools off of demand for new offices, retail and the like will likely reduce the growth in the new non-residential construction through 2020. At the same time, the increased availability of public funds will likely lead to higher construction in the healthcare sector.

At national level, except Belgium (-0.9%) all the countries posted a growth in new non-residential construction in 2017, with double-digit growth observed for Sweden (+17.7%) and Ireland (+16.1%). Expectations for non-residential construction in the United Kingdom from 2018 onwards indicate no chances of growth as a result of uncertainty around the outcome of the Brexit process. The German forecast also announces a slow-down in non-residential construction in 2018 and a contraction in 2019-2020, amid an atmosphere of slow demand and cautiousness in investments. In Ireland after a strong growth in 2017, non-residential construction activity is expected to slow down in 2018 before contracting sharply in 2019-2020 due to the slump in investments in the commercial office, industrial sites, health care and education sectors. A similar trend is forecast for Sweden where the new non-residential construction is predicted to drop sharply in 2020 with all decline coming from the private sector.

The non-residential renovation sector already rebounded in 2014, two years before new non-residential, and is expected to grow by 1.9% in 2017. Again, for this sub-segment, Eastern Europe posted a higher growth (+4.6%) versus

its Western counterpart (+1.7%). Even though the growth rates have been quite moderate, and will continue to be in the Euroconstruct forecast period, they will be enough to bring the production in 2020 closer to the peaks of 2008. In a context where there is still plenty of concern about the economy, and companies are not significantly expanding their staff and/or equipment, renovating their existing facilities remains a reasonable option. And from the point of view of property investors, the same atmosphere of caution also hints at the idea that buying assets in newly developed areas involves more risks than in consolidated areas, even if the latter are likely candidates to be renovated in order to make them competitive. At a country level, it is worth noticing the singular situation of saturation in the German housing renovation segment which is expected to extend to the non-residential segment, where the forecast is also negative from 2019 onwards.

Civil Engineering Construction

After a contraction of 1% experienced in 2016, civil engineering posted a growth of 2.2% in 2017 with growth being again higher in Eastern Europe (+10.4%) over Western Europe (1.6%). The renovation segment, which is more resilient than the new sub-segment, posted a higher growth of 2.7% compared to the 1.8% growth in new segment.

The underperformance of the new segment was mainly due to the reduced expenditures from public sectors in Western Europe: Spain (-12%), Italy (-8.3%), Denmark (-5.3%), Finland (-3%) and to a lesser extent Ireland (-1.6%). In Eastern Europe, Czech Republic registered a sharp contraction of new civil engineering construction of 13.6% due to the end of EU funds programmes. In Western Europe, the highest growth rates were registered in Norway (+10.3%), Belgium (+8.6%) and Sweden (+6.6%). In Eastern Europe, Hungary and Poland posted the highest growth in 2017 with 30% and 21% respectively.

In the renovation segment, except in the Czech Republic, the activity increased in all the countries in 2017. In Western Europe, the highest growth rate was registered in Spain (+6%), Portugal (4%) and Ireland (+4.1%) with the rest of the countries posting a growth between 1% and 3.5%.

Country Analysis of the Construction Market in Europe

Austria

After growing by 1.1% per year in 2015 and 2016, the building activity in Austria upturned in 2017 registering a further output growth rate of 2.8%. All segments and sub-segments developed positively but the main drivers of growth were housing and non-residential constructions, driven by the vivid economic performance of Austria. Total **residential** construction is estimated to have grown by 2% in 2017 with the new sub-segment increasing by 2.2% and renovation by 1.7%. This growth was not driven by the "housing offensive" scheme (Wohnbauoffensive) which targets to stop the rise in real estate prices by increasing supply, especially housing constructions. Indeed, this scheme is waiting for the approval of subsidies by the European Union and therefore was not yet implemented despite being introduced at the end of 2016. On the other hand, the housing construction in Austria is characterised by the stable output, which means its growth rates should come back to historical ranges of 1.3-1.5% per year during the 2018-2020 period. The **non-residential** construction sector increased significantly (+3.4%) in 2017 in association with the upturn in economic activity in Austria. The new non-residential construction showed a particularly strong growth (+3.8%) compared to the renovation (+2.3%) sub-segment. New industrial construction (+4.3%), which is part of non-residential construction sector, benefitted from higher investments of manufacturing sector thanks to increasing foreign trade and domestic demand. New office construction experienced a strong recovery, which is stimulating the market mainly in the capital Vienna. The new public construction (educational buildings and hospitals) also contributed to the performance of non-residential construction with strong growth of 4%. As for **civil engineering,** it is estimated to have expanded by 3.2% in 2017, with new civil engineering growing by 3.5% and civil renovation by 2%, on the back of stronger investments in road construction (+8.3%). In 2018, railway investments are expected to be the main growth driver of the civil engineering. Total construction in Austria

is expected to develop rather stable in the upcoming years 2018 to 2020 at an annual average real growth rate of about 1.4% per annum.

Belgium

In Belgium, the total construction output increased by 2.5% in 2017, with the major source of growth being residential and civil engineering. The **residential** construction sector is estimated to have registered a 2.5% increase with new residential increasing by 1.9% and renovation by 2.9%. In the new residential sub-segment, the further tightening of Belgian energy performance requirements in Flanders at the end of 2017 and the improved economic conditions (falling unemployment and rising disposable incomes in a context of very low mortgage rates) will likely generate a surge in demand for new housing construction (+4.1%) in 2018. Although less strongly, these factors are expected to continue supporting demand in the period 2019-2020. Regarding the residential renovation sub-segment, larger housing stocks in combination with ever higher quality standards and phasing out of some fiscal stimulus to support roof insulation created additional demand for renovation in 2017. After a strong recovery in 2016, the growth in the **non-residential** construction segment declined sharply (+0.7%) as new non-residential construction (-0.9%) contracted, while non-residential construction renovation posted a slow-down in growth (+2.9% in 2017 from 4% in 2016). In 2017, the contraction in new non-residential construction is largely explained by the end of the "Scholen van Morgen" (Schools of tomorrow) programme. The low volume of building permits issued for new non-residential construction in 2017 will likely accelerate the output contraction in this sub-segment in 2018 (-1.9% - forecast). However, in 2019-2020 as economy picks up in combination with an assumed increase in building permits, the new non-residential construction should grow strongly by 4.6% per annum. The non-residential construction renovation will likely grow even further (+8%) in 2018 on the back of the increase in the building stocks recently and the National Pact for Strategic Investments programme with a Euro 400 million budget for 2018. **Civil engineering** construction experienced a significant growth of 6.9% in 2017, with new civil engineering surging by 8.6%, whereas renovation increased by just 2%. The three flagship projects (the Oosterweel Link road, the Terneuzen Lock and RER regional express network) should maintain the growth in civil engineering construction over the 2019-2020 period. Even though the total construction output in Belgium is expected to grow by an average of 3.1% per annum over 2018-2020, the construction market in Belgium can be identified as a mature market.

Czech Republic

After a dramatic downturn in 2016, the Czech construction sector renewed with mild growth (+1.6%) in 2017 mainly driven by continued growth in residential construction, which offset the contraction in civil engineering and flat development in non-residential construction. The discontinuity in the EU funding programmes is causing a two-year recession on Czech civil engineering and also weighs down on non-residential construction. The **residential** construction sector is estimated to have increased again by double-digit growth of 15.4% in 2017. The new residential sub-segment surged by 21% thanks to very low mortgage interest rates and high demand for new dwellings. New buildings development is expected to continue growing with an anticipated reduction of building prices. Renovation in residential buildings decreased by 4.1% mostly because of an important increase in new constructions and despite governmental supporting programmes for energy savings and renewable energy use. Despite a lack of public investments, the output in the **non-residential** construction sector remained stable in 2017 with the new sub-segment growth (1.2%) covering the losses in the renovation area (-1.9%). More positive development is expected from 2018 backed up by the renewed growth in public spending, especially from EU funds and continued growth in private investments. After huge positive developments in 2014-2015, **civil engineering** is estimated to have continued its downward trend (-7.7%) in 2017 with the new sub-segment plummeting by 13.6% and renovation declining by 1.5% reflecting the end of the EU funds programme. The Czech construction sector is expected to register a positive outlook from 2018 onwards with all sectors contributing to the growth. The renewal of financing for engineering structures with the support of EU funds will likely lead to a renewed growth in civil engineering construction over the forecast period. The main downside risk to this outlook is the ability of Czech authorities to push enough shovel-ready projects to capitalise the total of EU funds approved in Brussels.

Denmark

Total Danish construction is estimated to have grown by 2% in 2017. The **residential** construction sector increased by 4.3%. Double-digit (13%) growth continued in 2017 in new residential construction thanks to the economy picking up and increasing housing needs, especially in larger cities

where residential real estate prices have risen considerably. The growth is, however, expected to slow to 8% in 2018-2019. Renovation in residential construction increased by a modest rate of 2% promoted by a government scheme supporting energy conservation, climate-related projects and broadband internet installation. Higher availability of labour, desire for comfort and fashion are also expected to gradually push residential renovation upwards. The **non-residential** construction sector is estimated to have increased by 2.3% in 2017. New non-residential construction grew by 2.6% driven mainly by a large governmental programme of new hospitals and a renewed growth of private sector construction. Renovation in non-residential construction is estimated to have grown by 2% driven by incentives in energy savings linked to high energy costs. In 2018-2020, the growth (4.1% per year) in new non-residential construction is predicted to accelerate thanks to an increased output in the healthcare sector. **Civil engineering** is estimated to have contracted by 2.5% in 2017 driven mainly by the new sub-segment. This is largely due to the completion of large projects such as the Copenhagen Metro Circle Line and a shift in political priorities due to the change of government in June 2015. However, civil engineering renovation needs are clearly high, which will likely maintain the stable growth output (1.5%) in this segment in 2017-2020 period. This should eventually offset the slow decline in new civil engineering construction in 2018 and 2019. Even with less-than-ideal circumstances, construction production in Denmark is expected to grow by 2.7% in 2018 and through 2020.

Finland

After a strong 2016 (+8.6%), the growth in construction output in Finland dropped to still a healthy 3.5% in 2017. All this growth stems from a good performance in both residential and non-residential construction segments. The **residential** construction sector is estimated to have continued a strong growth path in 2017 (+6.8%) driven by the solid demand for new flats. After four years of contraction mainly due to the drop in the volume of single and two-family houses, housing starts began to increase strongly from the end of 2015 (15.1% per year in 2016 and 2017). This growth was boosted by housing investors investing in new non-subsidised rental dwellings and increased urbanisation. For the next few years, however, the volumes of housing starts are expected to decline gradually (4% per year in 2018-2020) driven by oversupply of flats in many urban areas and declining rent prices (especially in 2020). The residential renovation sub-segment, the largest of the Finnish construction sector, increased at a moderate rate of 2% in 2017 mainly driven by a professional renovation segment, but to lesser extent by consumer-driven DIY renovation. The outlook for renovation is better than that for new residential starts since a considerable number of flats and attached houses are reaching the age when renovation will be required. The **non-residential** construction sector increased by 2.5% in 2017 after a strong growth in the previous year thanks to the general economic revival. New non-residential construction increased by 3.3% in 2017 driven by construction of buildings for education, industry, commerce and health-care. The growth in this segment is likely to accelerate (+5.1%) in this sub-segment in 2018 before the volumes shrink in 2019 essentially due to the contraction of the new office constructions. Renovation in non-residential continued its stable growth of 1.5% in 2017. The need to renovate non-residential buildings increases more steadily, especially in the public sector and is likely to grow even until 2030. **Civil engineering** contracted by 1.5% in 2017 mainly driven by contraction in the new segment (-3%) and despite growth in the renovation sub-segment (+2.9%). The drop in new civil engineering construction can be explained by the strong growth in 2016 (+6.5%) thanks to the delays in the first phase of the metro project, which increased investments in 2016 considerably. At the same time, much of the funding for reducing the repair backlog was also spent that year. Going forward, the new civil engineering construction volumes will likely to drop due to increasing development and input costs as well as the decrease in state funding resulting from the growing government debt. In the light of the sluggish economy, the boost provided by new building will be exhausted soon and the Finnish construction market is expected to decline progressively, growing by 1.4% in 2018 before contracting by 3.3% in 2019 and by 1.3% in 2020

France

The French total construction output is estimated to have grown by 3.6% in 2017. The French **residential** construction continued its strong upward trend from 2016 registering an increase of 5.1% in 2017. The new and renovation sub-segments increased by respectively 10.6% and 1.5%, still highly supported by political measures for access to ownership along with attractive housing loans. The extension of the “Pinel”, continued to boost the sales of new apartments while the reinforcement of the PTZ loan (“Prêt à taux zéro” – zero loan rate) impacted positively the sales of

one-family dwellings. A decline in the unemployment rate coupled with a modest growth of the household income foresees an improvement for the private new residential sector and an increase in the number of authorised and started dwellings in 2018. However, over 2019-2020 period, the PTZ scheme will be entirely dedicated to tense areas (A, A bis and B1), where home prices are already very high for an average buyer which should limit the positive effects of the scheme as a whole. Therefore, the new housing starts are forecast to grow modestly by just 1.7% in 2019 before declining by 1.6% in 2020. The year 2016 witnessed the end of a 7-year long downward trend in **non-residential** construction buildings which increased by 2.8% in 2017 thanks to performance of both in new (+4%) and renovation (+1.8%) sub-segments. New non-residential segment growth can be attributed to the improved economic visibility and steady economic growth. At the same time, output of buildings for education and healthcare improved significantly over the course of 2017. The situation is expected to continue improving to 2020, thanks to better macro-economic indicators in the private sector and the ambitious public investment plan proposed by the French President. The renovation sub-segment continued its upturn initiated in 2015 thanks to the implementation of energy performance decrees and accessibility requirements for existing non-residential buildings. The overall activity in non-residential construction is forecast to accelerate from 2018 onwards. The five-year funding plan, which is intended to support structural projects for the regional economy in key sectors including education, will only end-up in 2020. A significant part of this fund will be used for campus renovation and expansion. This in combination with continued momentum in the general economy should support the growth in non-residential construction, which should average 2.6% per year in 2018-2020. Although from a very low level, **civil engineering** continued its recovery with growth of 1.2% in 2017. Both new and renovation sub-segments posted similar growth mainly thanks to a stabilisation of public spending over the course of 2017. Civil engineering is expected to accelerate, since private investment (telecom, energy, water) will keep pushing, and public investment will recover (roads, high speed train) hopefully with some support from EC initiatives. With all the market segments growing, the forecast for France depicts a positive picture for construction with an average annual growth rate of 2% in 2018-2020.

Germany

The German construction output is estimated to have grown by 2.6% in 2017 boosted mainly by new housing. The **residential** construction sector increased by 2.9% with all of the impetus coming from the new construction segment (+9%), while renovation registered no growth. Higher refugee immigration, as well as pull-forward effects in single and two-family house construction due to tougher energy regulations as of the beginning of 2016, are giving a temporary boost to residential construction. Main constraining factors include the limited supply of construction areas and the sharp increase in construction and development costs exacerbated by tougher energy regulations. Concerning renovation construction in residential, renovation measures have been at an exorbitantly high level for a decade, significantly reducing the need for refurbishment in the years ahead. Also, a number of constraints (such as often little additional potential for energy savings, unclear usage horizons, building with complex ownership structures, complex state funding combined with ambitious target) point to a cool-down in the renovation market. Still, renovation in residential housing is predicted to remain by far the largest sub-segment by volume in the German construction industry. Although the **non-residential** construction sector increased by 1.7% with new increasing by 2% and renovation by 1.5%, the segment is suffering from companies' cautious approach to investment. There are nevertheless currently several indicators that companies will start reducing their funding on maintaining their buildings and/or on new construction in 2019-2020. At the same time, the lack of building lands will dampen any hopes for renewed growth in non-residential construction in Germany over the forecast period. In the renovation segment, given the size it has already achieved, it appears that little further expansion can be foreseen in near future. **Civil engineering** increased by 2.7% with new increasing by 2% and renovation by 3.5% in 2017. Civil engineering is mainly benefiting from far higher federal government funding for roads and railways and increased contribution to the expenditure on refugees realised by "Länder" and municipalities. For instance, in the transport sector, the federal government launched an investment offensive in 2015-2016 and the level of funding reached in 2018-2019 will then be kept at the same level going forward. This will likely affect the output in civil engineering construction in 2019-2020, which will drop by 0.5% per year. The German construction sector is forecast to perform fairly well in 2018 (0.9%) mostly because of a continued demand in the new housing segment. However, as soon as the first symptoms of

fatigue appear in 2019-2020, the whole German construction sector is forecast to contract slightly (-0.3%) with not a single segment expected to grow in 2020. The stagnation in the building renovation segment, representing about 55% of the German construction market, is particularly worrying.

Hungary

After a disastrous 2016 due to the slump in non-residential construction and civil engineering sectors, the construction output in Hungary is estimated to have rebounded by 25.5% in 2017. All sectors of the construction industry equally contributed to last year's performance. Thanks to the state support (tax relief, easier grants for young families) to turn the negative demographic trends, the **residential** construction sector saw an impressive growth (+35.4%) in 2017. The lion share of this growth came from the new residential sub-sector, which increased by 80% from a very low level. Renovation in residential construction grew more moderately by 5% as the government's housing policy prioritises young couples' home purchase. Additional growth in the 2018-2019 period should be the result of the current permit numbers and the number of announcements of intention to build a home within the simplified permit procedure. However, uncertainty surrounding the extension of the favourable VAT scheme will likely reduce the housing starts (-18%) in 2020. In the renovation sub-segment, the acceleration of growth is likely to be driven by a booming real estate market in 2018-2020 where the growth will average 10% per annum. The **non-residential** construction sector increased by 17.3% in 2017 thanks to various factors (delayed office, retail and logistics projects in the early 2010's and carried out to 2016-2017, improved economic outlook, low interest rate and Hungary's upgrade by international rating credit agencies). The renovation sub-sector performed particularly well where the output increased by a quarter, while the new sub-segment grew by 10%. The combination of state support with EU transfers to support SME's investment, the increased state expenditure for public projects in culture, entertainment and sports, the non-residential construction (both new and renovation) output will likely to post a steady growth of around 9.4% annually between 2018 and 2020. After a huge drop in 2016, the **civil engineering** sector experienced a strong rebound (+30%) in 2017 both in the new and renovation sub-segments thanks to the renewed availability of EU funds. Four mega infrastructure projects called Paks II will dominate the period between 2018-2022, which will provide a steady growth in both new and renovation civil engineering construction. The output growth in this sector is expected to average 9% per year. Due to the bottlenecks (higher development costs, reduced labour shortages, emigration of expertise) created in association with the quick rebound in construction demand, it will be challenging for Hungary to meet the abrupt growth in current construction demand. This means that the growth in construction output will likely decrease significantly from 21.4% in 2018 to just 1.4% in 2020. Despite an expected growth in other sub-segments, a sharp drop in housing starts will particularly affect the whole construction industry in 2020.

Ireland

The Irish construction sector commenced a strong recovery in recent years, albeit from an exceptionally low base, and is estimated to have registered a further growth of 14.6% in 2017. The **residential** construction sector increased by 22.4% with new being the most expanding segment with 34.2% growth while renovation increased by 7%. The level of housing supply in Ireland is substantially below where it needs to be. In July 2016 the Irish government published the Housing Action Plan, 'Rebuilding Ireland – an Action Plan for Housing and Homelessness', addressing all aspects of the housing system affirming the restoration of a properly functioning housing market at the top of the political agenda. Regarding renovation the Home Renovation Incentive scheme for owner occupiers has impacted positively on the volume of housing refurbishment works since its introduction in October 2013. Thanks to continued state support for the housing market, Irish residential construction is forecast to grow at double-digit rates in 2018-2020, albeit at a slower pace compared to performance in 2017. The **non-residential** construction sector increased by 14.7% with new again increasing the most strongly and by 16.1% while renovation increased by 3.6%. The Foreign Direct Investment sector generates significant opportunities, but the momentum is expected to fade out from 2019 onwards. The **civil engineering** sector is estimated to have contracted slightly (-0.6%) on the back of contraction in the new sub-segment (-1.6%) offsetting all the gains (+4.1%) in the renovation sub-segment. There is a commitment in the "Programme for Government" to leverage additional private investment in sectors struggling with large infrastructure deficits, including residential care, housing, regional transport and third level education. The overall volume of construction output is forecast to grow by 12.7% in 2018 and 7.9% in 2019. The Irish construction industry is in a recovery phase and is on course to experience

the most positive outlook in a decade, provided Brexit does not adversely impact this encouraging trajectory.

Italy

Following an upturn in 2015, 2016-2017 represents the period of consolidation of the Italian construction sector with an increase in output of 1% per year. New and renovation buildings are leading the market and only new civil engineering construction continued to decline in 2017. The **residential** construction sector increased by 1.5% with the new sub-segment moving up by 2.1% while renovation increased by 1.4%. New housing remains weak due to a poor demographic evolution, high real estate prices and the relatively high level of unsold stock of houses. In the years to come, a moderate growth is forecast to be the main characteristics of the market. With cumulative growth of 5.3% during 2018-2020 period, the residential construction output will still be 23% below the peak reached in 2006 by the end of 2020. The **non-residential** sector increased by 1.5% with new increasing by 1.8% and renovation by 1.3% in 2017. The recovery in non-residential construction started in 2015 and is driven by the industrial, office and agricultural segments as well as the public sub-segments. The demand for construction in these economic sectors will register a stable growth of 1.5% per year in 2018-2020 period backed up by the continued economic growth and elevated business confidence indicators. **Civil engineering** continued to contract in 2017 (-1%), driven by a further contraction in new sub-segment (-8.3%). Most of this drop in new segment comes from the public sector, where the changes in the implementation process of the new public finance rules as well as new administrative procedures introduced with the new Code for Public Contracts must have to some extent obstructed the activity in granting the public work. Therefore, 2016 and 2017 should be regarded as transition years and from 2018 onwards the upturn in civil engineering construction should also be supported by the release of EU funds for some infrastructure projects. The Italian market is still wrapped up by the stabilising effects of a prominent renovation market, representing a share of 60% of the total construction market. Although the fiscal incentives for different renovation and energy saving projects are expected to slow down in the building sector, the stable growth rate of renovation output in both residential and non-residential constructions should support a sustained growth rate of the Italian construction industry in 2018-2020 period. This, in combination with a renewed expansion in new civil engineering construction (+5% per year), is expected to lead to an annual average growth of 1.8% per year over the same period.

Netherlands

Following an upturn in 2014 and strong growth in 2015-2016, the construction sector in the Netherlands continued its growth path in 2017 with an estimated rate of 5.4%. The **residential** construction sector growth slowed in 2017 but remained vigorous (+8.4%) with new increasing by 13% and renovation by 5.5%. The development of residential construction is boosted by the revival of consumer confidence, low interest rates and the increasing need for housing due in light of a demographic growth. A steady increase in output is expected in the years further ahead. The **non-residential** construction sector increased by 4.9%. New construction in 2017 expanded by 6.8% boosted by the improvement of the economic situation and favourable export opportunities ensuring a steady recovery of industrial, and storage buildings, while health building output also increased significantly. In 2018, these segments are likely to continue growing, while the strong expansion of commercial buildings will lead to an even higher growth (+7.4%) in total new non-residential construction. In the years ahead, mainly the construction of health and office buildings will be the main growth drivers of the new construction. After a forceful output in 2016 (+7.9%), the renovation and maintenance segments are likely to post a steady growth of around 3% per annum from 2017 onwards with the most important drivers being the catching up on the postponed maintenance work and focused efforts to make existing buildings more efficient. **Civil engineering** is gradually recovering from the economic crisis and austerity measures in the past and registered a 2% growth in 2017 with contribution of both new (+2.1%) and renovation (+1.7%) sub-segments. Main drivers are economic growth, some large projects and the increasing need for work to accompany new residential construction. The recently devoted public budget by the Dutch government to beat the mobility problem should accelerate growth in civil engineering, mainly in new construction and renovation of roads and railways. The forecast reveals robust expectations of around 4.6% growth per annum for 2018-2020, which will also be driven by the start of investment by local government after several years of budget constraint. The balanced growth in the building area and the extra budget impetus from the Dutch government supporting higher growth in civil engineering will help the construction industry to grow by 3.7% between 2018 and 2020.

Norway

The Norwegian construction sector has barely experienced any significant recession, and yet still has some more room for growth. In 2017 the construction sector in Norway is estimated to have grown by 6.8% with new housing providing again most of the growth. The **residential** construction sector has increased by 9.2% with the new sub-segment growing by 13.8% while renovation increased by only 3.5%. The output growth in the new housing market is likely to be difficult to maintain from 2018 onwards. Decreasing housing prices since May 2017, a lack of production capacity (meaning that developers will find it difficult to attract construction firms to their projects), as well as a lower population growth could reduce the number of starts. Regarding renovation, establishment of asylum centres and municipal housing for the settlement of refugees has contributed positively to the sub-segment in 2017. The anticipated real wage growth along with an increase in the number of occupied dwellings are forecast to provide a steady growth (+2.3% per year) to the renovation and maintenance activities in the future. After a flat development in 2016, the **non-residential** construction sector increased by 3.2% in 2017 in both new and renovation by 4.9% and 1.9% respectively. Higher demolishing rates for existing offices and commercial buildings, transformation of existing non-residential buildings to dwellings and higher demand for hotels in association with booming tourism led to an increase in new buildings for business in 2017. The trend should continue in 2018, especially with the construction of two large hospitals. Regarding the renovation sub-segment, lower employment growth, in combination with companies being more cautious with non-essential expenditures lead to a modest growth. The improved economic situation should largely compensate for the diminishing public grants in 2017-2018, which means that R&M activity will post 2% annual growth for 2018-2020. **Civil engineering** increased by 7.6% with the new sub-segment expanding the most by 10.3% and renovation by 2.3%. This market has experienced strong growth since 2010 and there are no signs of weaker growth. In general, new investments are growing faster than maintenance. The Norwegian construction output is expected to continue growing by 2.6% per annum for 2018-2020. With new residential construction declining from high levels, growth comes from civil engineering (roads and energy) and building renovation segments. Opposite to most European countries, in Norway public demand for construction is stronger than private demand.

Poland

Following a slump in 2016, the construction output growth in Poland rebounded (+8.7%) in 2017 on the back of a recovery of investments co-financed with EU funds. The **residential** construction sector increased by 7.4% with the new sub-segment increasing by 9.2% and renovation by 2.4%. Like in previous years, the main driver of growth in housing remained in 2017 which are the investments in the construction of flats carried out mainly by developers. A simultaneous increase was observed in both dwellings completed and number of permits issued. In a context of stabilisation of the flats prices, housing demand has been fuelled by the growing affordability of mortgages and lower interest rates, supported by the improving labour market conditions and the extended government-subsidised housing programme “Flat for the Young”. Some slow-down is expected from 2018 in connection with the fading out of “Flat for the Young” and the implementation of the “Flat Plus” programme easing access to ownership and rental to medium and low incomes. After plummeting in 2016 (-9.1%), the **non-residential** construction sector increased by 5.7% in 2017 with a positive contribution of both new (8%) and renovation (2.2%) subsegments. Increased EU funds inflow and the increased investment expenditure by local governments were the main factors explaining a surge in non-residential construction. At the same time, continued improvement in economy helped private sector increase their investments. From 2017 onwards, an increasing absorption of EU funds under the financial framework for 2014-2020 is expected to provide impetus to the sector both for public and private constructions going forward. **Civil engineering** increased by 14.6% with new surging (+21%) from a slump in 2016 (-15.2%) and renovation continued a stable growth of 2%. In 2017 many delayed construction investments, related to the use of funds from the EU financial framework 2014-2020, are expected to start. Total construction output is expected to rise again by 9% in 2018 and 10.3% and 4.2% in 2019 and 2020 respectively. There is considerable uncertainty related to the possible delay or changes in the rate and range of the construction projects. As in the case of Czech Republic, Polish experts warn against the risk of not being able to put to work the full amount of EU funds available in the next years.

Portugal

In 2017, the construction sector in Portugal is estimated to have started to grow again by a solid rate (+6%) thanks to

the end of the cuts in public investment. The **residential** construction sector is estimated to have accelerated its growth from 5.3% in 2016 to 7.7% in 2017, with building renovation being the most dynamic segment of the construction sector registering an increase of 9%. Still, the new construction segment also progressed well with a 5% increase. For the near future, forecasts for the evolution of the housing market are positive, in a framework of economic recovery. New housing construction is expected to perform positively until 2019, but the renovation and maintenance works segment is still expected to register a higher dynamism. After a flat development in 2016, the **non-residential** construction sector increased by 3.7% in 2017 in line with the recovery of the Portuguese economic situation and the increase observed in the economic agent's confidence level. Both the new non-residential building construction and renovation contributed to this upturn with a growth of 4% and 3% respectively. In the renovation and maintenance works the continued several years of growth is driven the private investment, largely of foreign origin, attracted to Portugal by the availability of liquidity in financial markets and low interest rates combined with an undervaluation of real estate assets. From 2018 to 2020, the non-residential building segment is expected to register positive but declining growth rates from 3% in 2018 to just 1% in 2020. Non-residential renovation and maintenance works are expected to increase at a higher pace (4% per year) than the new construction segment. **Civil engineering** decreased sharply in 2016 (-11.4%), but then rebounded thanks to 5.6% growth driven by the recovery in public investment. As by far the largest the sub-segment, the new civil engineering construction contributed the most to this performance thanks to 6% growth, which compares to 4% growth in renovation sub-segment. Civil engineering is expected to continue a growth path thanks to the Structural Funds Programme "Portugal 2020" as well as healthy economic prospects. Nevertheless, the case of Portugal has some similarities with Spain. It is also a market that has suffered from a long and deep recession that the high forecast figures (2.9% per annum for 2018-2020) are giving a false perception of recovery since it starts from very low levels. Like in Spain, there are plenty of uncertainties in the non-residential segment, but some hope in new housing remains stirred by property investors. In line with the recovery of the Portuguese economy, the construction sector is forecast to post a growth of 5% in both 2018 and 2019, which will decline to 4% in 2020.

Slovakia

After a sharp recession in 2016 the construction sector renewed finally with the growth, which is estimated at 3.1% in 2017. The main factors that led to the 2016 recession were removed in 2017 such as the disruption in the EU funds causing a huge drop in civil engineering construction and new non-residential construction projects. The increasing demand for housing and building permits helped the **residential** construction sector grow by 3.2%. After a contraction in 2015, the new residential sub-segment registered an increase of 8.6% in 2016 and continued to grow to lesser extent (6%) in 2017 boosted by demand for housing, affordable mortgage lending and the purchase of apartments as investment. However, this growth is unlikely to sustain due to the negative demographic evolution, limited land availability and tighter credit regulations. The renovation segment declined in 2017 by 1.2% after an impressive growth the previous year thanks to the Slovak State support for thermal insulation of houses and apartment buildings as well as construction of municipal housing. This programme, which is replaced by a tax bonus in 201,8 will still maintain a stable output in renovation and maintenance construction before it starts contracting again through 2020 (-1.5%). The **non-residential** construction sector, being the largest segment of the Slovak construction market, finally began to grow in 2017 (2.2%) after huge losses in 2016 (-9.3%). The last year growth was essentially drive by the recovery in new non-residential construction (+2%), while the renovation sub-segment registered a further growth (2.6%). The increase in 2017 was driven by the construction of a new car company Jaguar Land Rover (production hall, a logistics centre, intermodal terminal) and investment activities in established companies (mostly Volkswagen), both will still be implemented throughout 2018. This will secure the growth in new non-residential output in 2018-2019 (+1.1% per annum) before it drops in 2020 (-2.3%). While **civil engineering** was the driving force of the construction sector in 2015, the sector is estimated to have registered a drop of 25% in 2016. 2017 was characterised by the return of public investment and EU funds, which led to the growth of 4.3% of civil engineering construction. The new sub-segment posted a growth of 4% in 2017 with the stable growth outlook in 2018-2020. All of the growth in the civil engineering construction is likely to come from the new sub-segment going forward mainly thanks to the infrastructure projects backed up by both Slovakia government and EU funds. The continued recovery expected in 2018, with 1.8% growth in the total construction

industry in Slovakia thanks to the new funds programme kicking in, as well as new road projects and investments from the car industry expecting boosting the non-residential segment. However, uncertainty lies for the year 2019-2020 for which a stable construction output is expected.

Spain

In 2017 the construction sector in Spain is estimated to have increased further by 4.1%, with segments moving at very different speeds illustrating a gap between public and private development. While the recovery in residential construction has remained steady, civil engineering suffered from the uncertain political environment and the central government's deficit targets. Non-residential construction lies somewhere in between, improving moderately. The **residential** construction sector is estimated to have increased by 9.7% in 2017 but to be still far from its comfort zone. Construction of new buildings increased by 14% as a result of the reappearance of owner occupant buyers following a fall in housing prices and more mortgages being granted. This is the second consecutive year after the crisis, there have been more housing starts than completions. The renovation sub-segment has registered a steady growth of 3% in 2017 as a result of large-scale renovations. Small-scale renovations are also awaking from a deep slumber, proof that in the last few years renovation investments had been postponed. The **non-residential** construction sector encounters more difficulties recovering than housing and is estimated to have increased by 4% in 2017 and both new and renovation sub-segments registered a positive development two consecutive year with new increasing by 1.5% and renovation by 3.5%. Non-residential real estate activity continues to be intense, and there are few signs of fatigue so far. But as demand has being boosted by speculating investment funds it cannot be interpreted as a clear upturn in the development of new construction. The downside risk in this market could come from Catalonia in general and Barcelona in particular if they lose their safe haven status for real estate investors. **Civil engineering** continued to decrease by 6.4% in 2017 triggered by new sub-segment (-12%), while the renovation recorded an increase of 6%. The local works that are making an appearance in the run up to 2019 municipal elections favoured mostly renovation segment, while severe cost curbing measures have reduced the number of new projects and slowed progress on the works already underway. Without a positive contribution from infrastructure construction, renovation production is expected to grow by 8.5% in 2018 essentially driven by local works from municipalities. For 2019-2020 Euroconstruct expects a steady decline of growth in civil engineering from the second quarter of 2019 (after the elections), while the weaknesses in the development of stated developed projects, especially railways manifest themselves once again. Total construction growth is forecast to average 3.5% per annum during 2018-2020 thanks to steady growth in the building sectors. However, this will still generate very modest output compared to pre-crisis levels.

Sweden

Since 2014, Sweden has been experiencing substantial growth thanks to the good performance of new building, and particularly new housing. In 2017 the Swedish construction sector is estimated to have increased by 9.9%. The **residential** construction sector increased by 12.9% driven by activity in new buildings increasing by a huge 23.8% while renovation dropped by 0.7%. The huge increase in housing starts, reaching levels not seen since the early 90-ties, can be explained by fundamentals like low interest rates, a huge demand, rising house prices, employment and income growth. However, this growth comes from very low levels, but the output level is slightly below the government's goal of 70,000 new dwellings annually to 2025. New residential buildings are expected to flatten out and drop from 2019 as a result of lower employment growth, uncertain house prices, rising taxes, shortages of labour and higher interest rates. The contraction in renovation is a result of a cut from 50% to 30% at the end of 2015 of the deduction on labour costs. The **non-residential** construction sector surged by 9.4% in 2017. The new non-residential building activity increased by 17.7% thanks to increasing employment, low interest rates, rising rents and decreasing vacancies. Based on building permits, project lists and the expected economic growth in general point towards a growth of 4.1% in 2018, mainly driven by industrial, miscellaneous and commercial buildings. Also public building investments in health services remain high. Non-residential renovation went up by 1.4% in 2017. Historically low interest rates, decreased vacancies and rising rents have made it a good opportunity to initiate renovation projects. The property market is expected to cool down in the coming years making investors increasingly selective. **Civil engineering** increased by 5.1% with new and renovation increasing by 6.6% and 2.2% respectively. Transport infrastructure is taking a leap upwards as a consequence of the transport infrastructure plan from 2014. Many new and large projects are reaching a more intensive phase. However, the extensive

need for renovation and maintenance will continue to enforce priorities. The Swedish construction industry will likely be featured by contrasting trends in its sub-segments in 2018-2020. With the residential wave expected to last until 2018, civil engineering keeping growing at moderate speeds, and a declining output in the building sector driven by new sub-segment will lead the construction sector output still rising in 2018 (+3.6%), stabilising in 2019 and contracting in 2020 (-3.2%).

Switzerland

In 2017 the Swiss construction output is estimated to have increased by 1.6%. However, financing conditions remain attractive and the economic environment improves continuously after a difficult year 2015. After calming down in 2016, the **residential** construction sector revived in 2017 registering growth of 1.2% in both new and renovation sub-segments thanks to favourable financing, higher disposable income associated with solid labour market even though the immigration flows slowed down. Residential construction is expected to slow down significantly in 2018 (+0.5%) and in 2019 (+0.2%) due rising interest rates, sluggish demand for housing and increasing number of vacant flats. These factors are forecast to have a further negative effect on the housing market in 2020, which means that it will contract by 0.8%. The **non-residential** construction sector increased by 2.3% with new increasing by 2.1% and renovation by 2.5%. Big projects such as the "Circle" at the airport in Zurich or investments of biotechnology and pharmaceutical companies support the non-residential construction sector. At the same time, the better economic situation for manufacturing firms leaves room for investments into production facilities and new offices. Also, the health and educational sector will likely support the non-residential construction on the back of aging population and outdated infrastructure. Therefore, the non-residential construction in Switzerland is predicted to post a stable output growth in 2018-2020, which will average 2.4% per year. After a stable output in 2016, **civil engineering** construction increased by 1.5% in 2017 with both new and renovation sub-segments contributing to this growth. The civil engineering segment is expected to benefit from two new infrastructure funds in the next few years: the railway infrastructure fund implemented on 1st January 2016 and the national road and agglomeration transport fund from 2018 onwards. The renovation segment will particularly benefit from higher share of investment over the next three years. Due to improving fundamentals and high investments into hospitals and infrastructure projects, the construction sector should accelerate its expansion in 2018 (+6.5%) and in 2019 (4.6%). However, contracting residential construction and declining growth outlook in non-residential and civil engineering will likely lead the Swiss construction industry posting just 0.7% growth in 2020. This more sedate growth rate and high production levels in the Swiss construction market indicate a situation of saturation.

United Kingdom

In 2017 the British construction sector is estimated to have experienced a growth of 2.7%, with real traction coming from all sectors. The **residential** construction sector increased by 3%, with new residential sub-segment increasing by 3.3% as a result of positive developments of both private and public housing construction. The forecast for private housing has remained relatively buoyant as the underlying market dynamics of high latent demand and lack of supply have not changed. The prospects of public house building market have also improved with a goal of UK government to build 250,000-270,0000 new homes a year. With the growth of 2.7% in 2017, the renovation activity is expected to be impacted negatively by pressures on disposable incomes and a modest pick-up in unemployment going forward. On the other hand, on the public side there can be an increase in activity going forward linked to the remedial work on high-rise apartment blocks in the aftermath of the tragedy at Grenfell Tower in London earlier last year. In the aftermath of the EU referendum vote, the **non-residential** construction sector experienced a declining growth in 2017 (1.7% versus 4.2% in 2016) with the new segment growing by 2% and renovation by just 0.7%. Outlook becomes uncertain due to development on the economic front and post Brexit effects. The most vulnerable sectors are the industrial, offices and commercial ones, with their heavy reliance on business investment. The outlook for construction in education is rather dull and depends heavily on subsidies despite a number of projects in the pipeline. The office construction is especially vulnerable to post Brexit uncertainties thus significant decline is forecast in 2018-2020. The only sector to show a positive outlook is the commercial one (retail, leisure) over the forecast period, especially in 2018. The capital's office development cycle had probably already peaked; thus the referendum result is likely to sharpen the downturn. The expected contraction in the new non-residential construction will likely be in contrast with a good performance of renovation market (+1.5%) over the period of 2018-2020. Indeed, a substantial number of buildings

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stocks of more than 40 years old in the education sector will require renovation and maintenance, which explain the outlook for R&M segment. After contracting by 4.2% in 2016, **civil engineering** recovered with a 4.4% growth in 2017 driven more by new work (+6%) rather than renovation (1%). While no change is expected in projects launched, in the future, the government may even boost capital spending to mitigate the impact of the referendum vote. Going forward, the road, rail and energy sectors will likely create new works, which will ensure the growth of 3.7% per year in this sub-segment during 2018 and 2020. There is little doubt that the vote in favour of leaving the European Union will have a significant impact on the UK's economic and political landscape in the ensuing years.

The resilience of housing market and the state support for large infrastructure projects will likely compensate for expected contraction in the hesitant non-residential segment, which will allow the UK construction industry to register its growth between 0.7% in 2018 and 1.9% in 2019 and to stabilise in 2020.

6. EOS Advocacy Actions

In December 2017, as the new year was approaching with new goals, promises and hopes, EOS elaborated a "political resolutions to aim for in 2018" to be disseminated to the Members of the European Parliament.

EOS European Organisation of the Sawmill Industry aisbl

It's new year's resolutions time and it's time for a fresh start!

The European economy has entered its fifth year of recovery, which is now reaching almost all EU Member States with some differences in industrial sectors. This is expected to continue at a largely steady pace in 2018 and hopefully with your support and engagement economic difficulties would be overcome. As the calendar year ends, people around the globe commit with vigour to all sorts of virtuous goals. Here are some political resolutions proposed by the European Organisation of the Sawmill Industry to consider adopting in 2018.

3 EASY RESOLUTIONS TO AIM FOR IN 2018

ADVOCATE FOR A LEVEL PLAYING FIELD. The European sawmill industries have become more complex due to globalisation, production assortment and the development of technologies. While it is the responsibility of the industry itself to adapt and innovate in order to face the market challenges, the European Union and its Member States should support these efforts by guaranteeing a level-playing field, by promoting investment and by creating a favorable business environment.

SUSTANAIBLE GROWTH FIRST. European policy makers should work for developing a new competitive, sustainable and resource efficient European Industry, ensuring both the creation of new jobs, and the transition to low-carbon economy. The use of renewable and natural resources, such as wood, would result in healthier products with a reduced environmental impact considering that these components could be returned to the biosphere at the end of their service life. To make possible the transition to a sustainable growth an economically competitive bio-economy should be promoted through the implementation of climate policies (e.g. carbon market) and non-discriminatory regulation for construction materials.

THINK ABOUT WOOD! Wood is by far the most economically important forest product although not all forests are focused on wood production. Let's ensure that the Forest Strategy is geared towards securing healthy European forests, which have to be able to provide their social, environmental and economic services, including enhancing wood availability, which is the pillar upon which the whole European sawmill Industry is standing. Implementing the LULUCF regulation, harvested wood products and their central role in the decarbonization of the economy should be properly accounted for.

- ✓ When sourced from sustainable managed forests, wood represents the greenest choice. Wood is a renewable material that retains CO2 throughout its lifecycle, its use plays a key role in the decarbonization of the economy and in the advancement of the bio-economy.

The European Organisation of the Sawmill Industry wishes to all Members of the European Parliament a fruitful 2018.

Season's greetings,
The Members of the European Organisation of the Sawmill Industry

6.1 The Club du Bois meeting on 10 January 2018

"*We are living in a place, Europe, that the large majority of the world population envies*" with these words, aimed at emphasising the key role of Europe in providing welfare, the Chairwoman **Honourable Member of the European Parliament Mrs Maria Noichl** opened this new edition of the Club du Bois meeting wishing to all participants a positive 2018. She welcomed the woodworking industry family to this event and she warmly thanked the **Members of the EU Parliament present to this meeting**: **Mr Eric Andrieu, Mr Paul Brannen, Mr José Inácio Faria, Mrs Marijana Petir, Mr Paul Rübig, Mr Tom Vandenkendelaere, Mr Ricardo Serrão Santos and Mr Carlos Zorrinho**.

The Club Du Bois is an event jointly organised by the three Brussels based organisations: CEI-Bois, EPF and EOS representing the interests of the European Woodworking Industry. Since 2014, Mrs Noichl, Honourable Member of the EU Parliament, is the Chairwoman of this dedicated Club.

The main focus of the meeting was the contribution of the woodworking chain to the European Communication "Investing in a smart, innovative and sustainable Industry - A renewed EU Industrial Policy Strategy".

The European wood Industries are very innovation-minded: through technical innovations, the sector is now undeniably in a position to supply high-quality products all over the world providing market oriented solutions and new systems to ensure the highest level of traceability of timber. Establishing a Wood Industry 4.0 requires companies to rethink the way they do business and a long-term effort is needed to successfully navigate the changing industrial environment of Industry 4.0.

Honourable Member of the European Parliament Paul Rübig (EPP) emphasized the importance of research and innovation: if the woodworking industries aspire to be competitive in an increasingly challenging economic arena they need to devote enough resources to research and innovation. To this end, he **called for all stakeholders to seize the opportunities provided by Horizon 2020 (FP8) and by the programme which will succeed the FP8**, the new framework programme funding research, technological development, and innovation (FP9, starting from 2021).

For further information & date of the next meeting, please visit www.clubdubois.eu.

Brief report on the presentations:

Innovative product approach -
Mr Bert Vandenkendelaere, Sales & Marketing Director Unilin, Division Panels, Belgium

Mr Vandenkendelaere, Sales & Marketing Director at one of EPF's industrial members here in Belgium, Unilin, provided a presentation on the innovation in the Company.

As he stated, the wood based panels Industry needs innovation: a large part of what is sold is a commodity product, in this sense innovation is a key tool to remain competitive and expand exports outside the EU borders. "*Within UNILIN company innovation is part of the climate, and young and old colleagues, from sales to maintenance, via accounting, all departments are invited to innovate and to think further about what our company, our processes and our products should look like in the future*." Mr Vandenkendelaere said. Creating a competitive wood based panel requires important and continuous high-tech investment. Today, Unilin is changing its production assortment using more and more recycled wood rather than fresh wood. In the past, chipboards used to contain 100% fresh trees - cut and chipped into chipboards; now

"UNILIN can be considered as one of the founding FATHERS OF THE CIRCULAR ECONOMY. Creating wood based panels from recycled materials is one of the ways in which our industry reduces the consumption of resources and contributes to carbon storage, low energy consumption in a sustainable way. This was an example of how we innovate in our production process, but also in our products. We continue to strive to make a difference against our competitors outside of Europe!"

Unilin is using 80% recycled wood obtained from old pallets and old furniture. Recycled materials need to be cleaned and this requires enormous investments into new cleaning technologies for urban wood and changes in the production technology.

LOOKING INTO PRODUCTS: In the eighties for example, the floors in houses, offices and hotels were usually covered in carpet. Laminate flooring became more popular from the eighties onwards, but most of us will remember that laminate flooring needed to be glued to the floor surface, which was time-consuming. One of the innovations that rocked the flooring industry was the Unilin system. Unilin invented a system, which is now over 20 years old, that enabled glue-less locking of floors. The system is now present in various types of flooring of most of the world's flooring manufacturers and has made it unnecessary to glue floors. This enabled consumers to install the floors themselves in a simple and fast way and allow professional workers to install floors much faster than before. Obviously, not only Unilin, but the entire wood based panel Industry is trying to make installation easier and to be more competitive on the market. The same system has in the meantime also been applied to wooden parquet flooring, to carpet and vinyl tiles, to wall panel systems and even to furniture, for which you no longer need screwdrivers and screws, but can click them together! Thanks to the international protection of intellectual property rights, these European systems have conquered all other continents as well and are used by manufacturers there under license.

Another significant example of excellence in innovation is the development of woodgrain designs and embossed pressing. Unilin, as the rest of the wood based panel Industry, has been spending many years in trying to create melamine faced chipboard panels with a design that looks and feels just like solid wood!

The industry thrives thanks to its innovations of the past years, such as click technology, recycled wood as raw material and registered and embossed designs. The wood based panel industry will continue to invest in the coming years to innovate further and to stay competitive as an important European industry, directly creating jobs for more than 100.000 Europeans.

UNILIN
FOR SMART LIVING

UNILIN based in Belgium, employs approximately four thousand nine hundred staff spread over twenty production units, with a turnover of approximately one point five billion euros. Since 2005 UNILIN is part of the New York stock exchange listed Mohawk group.

Integrating innovation in the sawmill business
Mr Michael Proschek, Head of Compliance and Sustainability at Schweighofer, Austria

Mr Michael Proschek, Head of Compliance and Sustainability at Holzindustrie Schweighofer opened his intervention explaining that the approach of Holzindustrie Schweighofer to innovation can be summarised in two main activity areas:

- Innovation in the supply chain and sustainability approach;
- Support sector-wide innovation with the Schweighofer-Prize.

Supply chain traceability is a key element in order to guarantee sustainability of timber products; for this reason, as explained by Mr Proschek, Holzindustrie Schweighofer has introduced one of the most innovative solutions to ensure the traceability and transparency for the timber supply chain: the publicly accessible TimFlow GPS system. The GPS tracking system "Timflow" for saw log deliveries represents an innovative tool related to the company's action plan for a sustainable timber supply chain in Romania. Following its commitment to fight unlawful logging, the company bases its approach on constructive dialogue with environmental NGOs, transparent communication and an overall enhanced

The measures laid down in Holzindustrie Schweighofer's action plan surpass all legal requirements by far and set novel control standards within the timber industry in Romania and the regulatory requirements. It also complies with the standards laid down by the European Timber Regulation (EUTR) for placing legal wood on the European Single Market. Every one of the more than 700 trucks delivering saw logs to the company's mills is now equipped with a GPS device that tracks its exact route from its loading place to delivery at the mill gate where all information will be thoroughly checked.

control system for its supply chain. Since the company does not harvest any trees itself, it requires its suppliers to equip all trucks with the GPS system Timflow. This allows tracing of the delivered timber back to its exact loading place. Holzindustrie Schweighofer is even publishing this data (GPS tracks and photos) of all truck on www.timflow.com, thereby providing providing for maximum transparency within the supply chain.

ONLY SUSTAINABLE SOURCED WOOD: Holzindustrie Schweighofer has put in place a very strict control system: if suppliers don't follow the company's purchasing policy, they are excluded from the supply chain. Moreover, Holzindustrie Schweighofer does not accept timber from national parks trough the "Zero Timber Transports from National Parks". Although the Romanian legislation would allow for logging in so called national park buffer zones and in case of sanitary cuttings, timber from this area is not accepted by the Company.
Further and more detailed information is available on the website www.timflow.com

Finally, Mr Proschek informed that since 2003 the Schweighofer family awards with a total prize money of €300,000 biannually the best innovative ideas, technologies, products and services in order to strengthen the competitiveness of the European Forest Based Sector. On the occasion of the 2017 Schweighofer Prize, the main prize was awarded to the internationally renowned wood structural engineer Hermann Blumer and the Japanese architect Shigeru Ban. Their joint projects include among others the intricate support structure for the Yeoju Golf Club in South Korea and the structural system of the Tamedia building in Zurich made entirely of wood. Mr Proschek concluded his intervention inviting the Club du Bois participants to the next Schweighofer Prize that will take place in Vienna in 2019.

HOLZINDUSTRIE SCHWEIGHOFER

Holzindustrie Schweighofer is a traditional family-owned company of Austrian with over 3,500 employees in Austria, Germany and Romania producing high-quality wood products for industrial customers all over the world. Holzindustrie Schweighofer support sustainable forestry, and have implemented a comprehensive action plan for this purpose.

Digitisation in the forest-based sector State of technology and opportunities for innovation Mr Uwe Kies, Secretary General of Innovawood

Mr Uwe Kies of, Secretary General of Innovawood, was the last presenter of this edition of the Club du Bois. The title of his presentation, which was co-authored by Mr Andreas Kleinschmit von Lengefeld (Director of Research and Innovation at FCBA - Forêt Cellulose Bois – construction Ameublement), *was Digitisation in the forest-based sector State of technology and opportunities for innovation*.

In his remarkably forward-looking presentation, Mr Kies, raised the attention of the audience by inviting the stakeholders to focus on how fast innovation is changing the world. The so-called fourth industrial revolution (Industry 4.0) is underway. It is going to be characterized by interconnected, self-configurating and self-optimising Cyber-Physical Systems (CPS); value chains will be more

and more horizontally integrated, while there will be a vertical integration of production systems. The internet of things and internet of services will play an important role and together with several highly disruptive technologies may ensure highly flexible and customized products and the creation of new business models such as virtual value chains. While it is premature to prophesy the real impact in everyday life, it appears increasingly likely that as a result of the mass diffusion of these disruptive innovations many industrial sectors will look completely different in some years. Forests and forest-based industries will partake of the benefits connected to these technologies.

Mr Kies proceeded to dwell on the opportunities connected across various segments of the industry. In forestry, high resolution scanning will allow better forest inventory, while optimized, efficient harvesting reduces impacts on ecosystem. Safety in forestry will improve courtesy of rescue chains. Automation will probably allow the utilization of remotely controlled harvesters.

In the sawmill sector, better machines will reduce downtime. In general, there will be an optimization of material flow and use, while activities such as grading and sorting will be enhanced thanks to better technology. Better traceability systems are already available and allow to better determine the origin of wood. Flexible and more customized products are gaining momentum.

Wood construction will be made much easier by better computational design, rapid prototyping and the use of robotics for assembly. Many engineered wood products are already available in the market and there is hope that they will boost the utilization of wood in construction.
Customised solutions will also characterise more and more

While it is premature to prophesy the real impact in everyday life, it appears increasingly likely that as a result of the mass diffusion of these disruptive innovations many industrial sectors will look completely different in some years. Forests and forest-based industries will partake of the benefits connected to these technologies.

the furniture sector, while a fully connected smart factory will reduce production time. Value chain integration will make collaboration of specialized manufactures and suppliers easier. Wood construction will be made much easier by better computational design, rapid prototyping and the use of robotics for assembly.

Many engineered wood products are already available in the market and there is hope that they will boost the utilization of wood in construction.

Customized solutions will also characterize more and more the furniture sector, while a fully connected smart factory will reduce production time. Value chain integration will make collaboration of specialized manufactures and suppliers easier.

As stated by Mr Kies, the paper industry is supposed to acquire full real-time control of complex, large-scale productions while wood and wood fibres will be more and more used in textiles, chemicals, plastics, biofuels. There are thus huge opportunities to be reaped from 'upgrading' Europe's forest-based industries to take full advantage of the digital transition. It is important, however, not to neglect the obstacles on the way of the sector – such as the presence of millions of private forest owners who are not sufficiently aware of the relevance of forests, a sector characterized by multiple and at times competing supply chains and the prevalence of Small and Medium Enterprises which do not have enough funds to invest in research and innovation.

Therefore, an adequate policy frame (which should keep into account that the forest-based sector is a main contributor to climate protection and wood is Europe's most underdeveloped renewable resource) is fundamental for the sector to fulfil its potential.

InnovaWood is an umbrella organisation that integrates four European networks in the Forest, Wood-based and Furniture industries into a more effective mechanism to support innovation in these sectors.

6.2 Wood Dust: Revision of the Carcinogens and Mutagens Directive (2004/37/EC)

On 16 May 2016 the European Commission has proposed changes to the Carcinogens and Mutagens Directive (2004/37/EC) to limit exposure to 13 cancer-causing chemicals at the workplace. The Directive 2004/37 consolidates and replaces Directive 90/394 and its amendments aims to protect health and safety in the workplace by establishing specific requirements for the protection of workers who either are or are likely to be exposed to carcinogens and mutagens. In this context, the directive defines minimum requirements, including permissible occupational exposure limit values and various preventive measures. Mutagens and carcinogens are defined as various substances or mixtures of substances that meet the criteria for classification as a category 1A or 1B carcinogen/mutagen set out in Annex I to Regulation 1272/2008.

This revision aims at increasing the protection for workers from cancer-causing chemicals. Concretely, the Commission is proposing to address exposure to 13 cancer-causing chemicals by including new or amended limit values in the Carcinogens and Mutagens Directive. These limit values set a maximum concentration for the presence of a chemical carcinogen in the workplace air. The proposal is based on scientific evidence and follows broad discussions with scientists, employers, workers, Member States' representatives and labour inspectors. This proposal introduces limit values for 13 of identified priority chemical agents including **hardwood dust.**

In particular:

Chemical agents	Proposed OELs	Relevant sectors	Types of cancer caused/ other illnesses	No. of exposed workers
Hardwood dusts	3 mg/m3	Wood working industry, furniture manufacture sectors and construction.	Sinonasal and nasopha-ryngeal cancers	3, 333,000

In several occasions, the European Organization of the Sawmill Industry (EOS) stressed its support for the threshold of 3 mg/m^3 restricted to hardwood dust as assessed and determined by the European Commission in a 10 year process of consultations and analysis with experts and interested parties. EOS highlighted that any lower limit would entail significant additional costs for firms and would require drastic changes in manufacturing processes and the installation of compliant ventilation systems without having any concrete guarantee on the effective possibility of reducing the wood dust in the working area. Moreover, such costs risk disproportionately affecting SMEs, possibly forcing some of them out of business. Jobs will be then lost, and with no clear additional benefit to workers health. Additionally, EOS recalled that currently there is no harmonised methodology for measuring workers' exposure to carcinogens in Europe.

On 11 July 2017, the Council's Permanent Representatives Committee (so called COREPER) approved the provisional agreement reached with the European Parliament on 28 June on the directive protecting workers from exposure to carcinogens or mutagens in the workplace.

The main changes to the Commission proposal are:

- Reprotoxic substances: the Commission will have to assess the possibility of including reprotoxins in the scope of the directive, as supported by Parliament, by the first quarter of 2019 at the latest, and may present a legislative proposal.
- Chromium VI: there will be an exposure limit value of 0.010 mg/m^3 for a period of five years after the date of transposition of the directive; after that, a limit of 0.005 mg/m^3 will apply. A derogation for welding, plasma-cutting or similar processes puts a limit of 0.025 mg/m^3 for the first 5 years and of 0.005 mg/m^3 thereafter.
- **Hardwood dust: a limit is set at 3 mg/m^3 for five years after the entry into force of the directive and is lowered to 2 mg/m^3 thereafter**.
  - o The limit values set out in Annex III to Directive 2004/37/EC for vinyl chloride monomer and hardwood dusts should be revised in the light of more recent scientific and technical data. The distinction between hardwood and softwood dust should be further assessed as regards the limit value in Annex III to Directive 2004/37/EC as recommended by the Scientific Committee on

Occupational Exposure Limits and the IARC.

- Mixed exposure to more than one species of wood is very common, which complicates the exposure assessment of different species of wood. Exposure to dust from softwood and hardwood is common among European workers and may cause respiratory symptoms and diseases, with the most serious health effect being the risk of nasal and sinonasal cancers. It is therefore appropriate to establish that if hardwood dusts are mixed with other wood dusts the limit value set in Annex III for the hardwood dust should apply to all wood dusts present in that mixture.

- Respiratory crystalline silica dust: the Commission committed itself to evaluating the need to modify the limit value for respirable crystalline silica dust as part of the next evaluation of the implementation of the directive.
- Health surveillance: the doctor or authority responsible for the health surveillance of workers within the Member States may indicate that health surveillance must continue after the end of exposure, for as long as needed to safeguard health.

The text was then subject of a first-reading vote during the October plenary session, and Parliament endorsed it on 25 October with 540 votes in favour, 6 against and 119 abstentions. The Council formally adopted the directive on 7 December. The final act was signed by the presidents of the co-legislators on 12 December. **It was published in the Official Journal as Directive (EU) 2017/2398 and entered into force on 16 January 2018. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 17 January 2020.** They shall immediately inform the Commission of the text of those measures. (*Reported on the next page, copy of the EOS Press Release sent prior the COREPER meeting held on 11 July 2017*).

Brussels, 3 July 2017

PRESS RELEASE

The European Organization of the Sawmill Industry (EOS) expresses its deepest concerns related to the agreement on the Carcinogens and Mutagens at Work Directive by Maltese presidency and the European Parliament on the hardwood wood dust threshold limit.

While supporting the reduction of the existing exposure limit value at 3mg/m3 restrictedly for hardwood dust (currently at 5 mg/m3), the further lowering of the threshold at 2mg/m3 in 5 years' time is not supported by any impact assessment and it lacks technical feasibility.

Moreover, any threshold limit would differently apply in Member States because the testing methods are not harmonised. Today different testing methods lead to lack of comparability, which undermine efforts aimed at increasing workers' protection at the European level. Prior to any consideration on the most appropriate threshold limit, a common methodology should therefore be established. Presently, some European Member States are actually refusing the harmonization of testing methods, provoking great discrepancies in the internal market and without giving any realistic guarantee of safer and healthier working place.

It should be acknowledged that even the most high-quality ventilation systems used in the sawmill plants are sold on the market only with the information related to the quantity of wood dust absorbed/ captured by the machine. Hence, no guarantee is given about the exposure threshold that can be achieved. The European Sawmill Industry is always committed in finding the best and most advanced technologies, but only realistic and feasible exposure limit value should be proposed and adopted homogeneously by Member States.

It is reasonable to believe that no hardwood sawmill plants will be able to achieve any threshold below 3mg/m3. Furthermore, the exposure threshold shall not be applied in the fresh sawn timber cutting phase as it is technically impossible to do a reliable dust sampling in this phase (particle size, high moisture condition). Finally, unlike other substances, wood cannot be substituted in order to better comply with the European legislation or to reduce compliance costs.

Without doubt the European Sawmill Industry, as the European woodworking and the furniture sector, is very committed in providing workers with the best and safest working conditions. The exposure limit value of 3 mg/m3 restrictedly for hardwood dust - as proposed by the European Commission – was already identified in the impact assessment as the "clearly preferred value" that combines clear benefits both for workers' health and companies' technical and economic possibilities.

EOS regrets that this agreement was reached without considering the specific issues that have been continuously raised by European Sawmill, Woodworking and Furniture Industry on the technical aspects related to our processing structure.

Together with the woodworking and furniture sector, EOS agrees with the necessity to better reflect on the status of technology available and call for the need of harmonised measurements. In this sense, we support the request for a Wood Dust Conference – aimed at analysing these existing issues – that will soon be submitted to the European Commission by Social Partners in the field.

6.3 Climate Change and Energy policies

6.3.1 Proposal for a Directive of the European Parliament and the Council on the promotion of the use of energy from renewable sources (recast)

On 30 November 2016, the European Commission launched the Clean Energy package, including a recast of the Directive on the promotion of renewable energy sources ('RES Directive'), in order to drive progress in meeting the goals of the 2030 EU Climate and Energy Framework, the revised RES Directive seeks to contribute towards the key EU goal of attaining a share of at least 27 % of EU energy from renewable sources in final consumption by 2030.

The recast RES Directive provides guiding principles on financial support schemes for RES, renewable energy self-consumption, renewable energy communities, and district heating and cooling systems. It aims at enhancing mechanisms for cross-border cooperation, simplifying administrative processes, strengthening the sustainability and greenhouse gas emissions savings criteria for biofuels, and outlines measures to mainstream the use of RES in the transport and heating and cooling sector. The proposal seeks to mainstream RES in the heating and cooling sector (which accounts for 50 % of total energy demand in Europe), in particular by asking Member States to increase the share of renewable energy supplied for heating and cooling by at least 1 percentage point every year. Member States would be obliged to provide data on the energy supplied for heating and cooling, including the proportion obtained from different RES. Member States are also required to carry out a regular assessment of their use of RES and waste heat/cold in heating and cooling. The proposal also establishes guiding principles for district heating and cooling systems, including the right for consumers to disconnect from inefficient systems. The proposal contains detailed provisions to improve the sustainability and greenhouse gas (GHG) emissions-saving criteria for biofuels, bioliquids and biomass. These criteria would be aligned with the obligations of the EU and its Member States as signatories to the UNFCCC Paris Climate Change Agreement, and would reinforce the Commission's legislative proposal on land use, land use change and forestry (LULUCF) by introducing a new sustainability criterion for forest biomass. The required GHG emissions savings from biofuels and bioliquids would be increased to at least 70 % for installations starting operations from 2021 onwards, and at least 80 % for electricity, heating and cooling from biomass. The latter target would increase to 85 % for installations starting operations from 2026 onwards. However, existing or forthcoming installations would only need to meet the less stringent requirements of the existing RES Directive: at least 50 % for installations in operation before 5 October 2015; and at least 60 % for installations in operation from 5 October 2015.

> As per Article 194 of the Treaty on the Functioning of the European Union: EU energy policy is aimed at promoting the development of new and renewable forms of energy to better align and integrate climate change goals into the new market design.

Council adopted its general approach in December 2017, while Parliament adopted its position in plenary in January 2018. Interinstitutional trilogue negotiations are currently taking place (*May 2018*).

The recast directive would enter into force on 1 January 2021, when the existing RES Directive would be repealed. The proposed transposition date for Member States is 30 June 2021. The recast directive asks the Commission to publish a legislative proposal in 2026 on the regulatory framework for promoting RES in the post-2030 period. It also provides for a Commission report reviewing application of the recast directive in 2032.

Under the proposal, the Commission would be empowered to adopt delegated acts in a range of specific areas. These would automatically enter into force, provided that no objection has been expressed by the Parliament or Council within a period of two months. The power to adopt delegated acts would be conferred for a period of five years starting on 1 January 2021, and could be revoked at any time by the Parliament or the Council.

FOCUS ON BIOMASS

The EU currently has two targets for biofuels, namely to source 10% of transport fuelsfrom RES by 2020 (the Renewable Energy Directive (2009/28/EC)) and to oblige fuel providers to reduce the greenhouse gas intensity of their fuels by 6% by 2020 (the Fuel Quality Directive (2009/30/ EC)). In its communication of 22 January 2014 entitled 'A policy framework for climate and energy in the period from 2020 to 2030' (COM(2014) 0015), the Commission proposed to scrap these two targets after 2020. This change is linked to the uncertainty about how to minimise the indirect emissions effect of land-use change associated with biofuels. In 2015, the Renewable Energy Directive and the Fuel Quality Directive were revised to recognise and mitigate the negative environmental impact that biofuel production can have in terms of indirect land-use change and related greenhouse gas emissions. Accordingly, the share of energy from biofuels produced from cereal and other starch-rich crops, sugars and oil crops and from other crops grown as main crops primarily for energy purposes on agricultural land shall be no more than 7% of the final consumption of energy in transport in the Member States in 2020. After the publication of non-binding criteria for biomass in February 2010, the Commission decided to review the measures, to evaluate the success of its original recommendations and to establish whether mandatory standards would be necessary in the future.

The Commission's November 2016 proposal for a revised Renewable Energy Directive includes updated sustainability criteria for biofuels used in transport and bioliquids, and solid and gaseous biomass fuels used for heat and power. The proposal includes a sub-target of 3% for advanced biofuels. While the existing 7% cap on first-generation biofuels is maintained, an EU-level obligation for fuel suppliers to provide a certain share (6.8%) of low emission and renewable fuels and an extension of the scope of the EU sustainability criteria for bioenergy (to cover biomass and biogas for heating and cooling and electricity generation) is introduced.

EOS and the representatives of public and private forest owners acted together in order to avoid the adoption of several controversial amendments in the framework of the plenary session vote on the Renewable Energy Directive expected on 17th January 2018. These amendments called for mandatory instruments for "avoiding market distortion and for compliance with the waste hierarchy".

Specifically:

- AM 321: Member States shall ensure that their national policies, including support schemes, are designed to conform to the waste hierarchy, as set out in Article 4 of Directive 2008/98/EC and avoid significant distortive effects on markets for (by)products, wastes and residues. To that end, Member States shall regularly review their national policies and justify any deviation in the reports required under Article 18(c) of Regulation [Governance].
- AM 322: To avoid unnecessary distortions of raw material markets, support schemes for renewable energy from biomass should be designed to avoid encouraging inappropriate use of biomass primarily for energy production if there exists industrial or material uses providing higher added-value, which could include giving priority to the use of wastes and residues. Members should take into account available sustainable supply of biomass.

AM 321 and AM 322 were having the support of the ALDE (liberal) and EPP (Christian-Democratic) Groups in the European Parliament.

To avoid that a majority was achieved during the vote on the occasion of the plenary session on Wednesday 17th January in Strasbourg, it was essential to obtain support from the S&D (Socialists and Democrats), ECR (Conservatives and Reformists) and/or Green Groups – asking them to reject these two AMs and try to break the ALDE coalition and possibly the EPP.

Copy of the joint letter sent by EOS and the representatives of public and private forest owners to the EU Parliament and the press release, are here available.

Joint letter

To the Members of the
European Parliament

Brussels, 15th January 2018

RE: European Parliament plenary vote on the Recast of the Renewable Energy Directive - Joint call of the European Forestry and Agricultural sectors in support of forest bioenergy to decarbonize Europe

Dear Member of the European Parliament,

Forests and the forest-based sector play a significant role in mitigating climate change through decarbonizing the European economy, enabling the transition to a bioeconomy, increasing the renewable energy share of the EU's total energy consumption, fostering energy efficiency and promoting the efficient use of natural resources. While this can create new opportunities for the forest-based sector, care needs to be taken that EU policies do not create counterproductive results, not only for forests and the forest-based sector themselves, but also for their potential contribution to the post-2020 climate and energy targets.

On behalf of the European forest owners and managers, farmers and their cooperatives, sawmill industry, forest workers, contractors and professionals, please find below our main concerns in view of the upcoming European Parliament plenary vote on the recast of the Renewable Energy Directive.

REJECT
Amendment 296 on Article 26.5
Amendment 346 on Article 26.5
Justification:
EU legislation should not exclude certain types of wood biomass, such as roundwood, as a renewable raw material for heat and power. Restricting the use of forest biomass for certain end-uses goes against the principle of the open market and would prevent the proper valuation of the resource. In consequence, the viability of sustainable forest management will be seriously undermined and the necessary investments in the resilience of forest

ecosystems, e.g. through thinning operations, will be significantly reduced and the risk of wild fires and pests will increase.

REJECT
Amendment 321 on Article 3.2a
Amendment 322 on Article 4.1
Justification:
These amendments impose limitations on certain biomass assortments for bioenergy use and therefore indirectly enshrines the cascading use principle into EU legislation. The cascading principle should not be embedded in EU legislation, as recognised by the European Commission. Regulating cascade use would hinder resource efficiency and innovation, have a negative impact on raw material markets and lead to increased costs and administrative burden.

SUPPORT
Amendment 323 on Article 26.1.2
Justification:
Compared to the ITRE report, this amendment clarifies the issue of production of biofuels, bioliquids and biomass fuels from waste and residues by referring to the waste hierarchy of Directive 2008/98/EC. It promotes efficient use of resources and ensures that the use of waste and residues is not limited and restricted.

REJECT
Amendment 278 on Annex IX – part A – point h
Amendment 280 on Annex IX – part A – point o
Amendment 282 on Annex IX – part A – point q
Amendment 303 on Annex IX – part A – point h
Amendment 304 on Annex IX – part A – point q
Justification:
Advanced biofuels is one of the solutions to ensure a more climate-friendly transport sector and will contribute to a sustainable forestry sector as well as growth and jobs in EU rural areas. It is crucial to keep the trust of current and new investors in EU biofuel policies, and therefore it is important to maintain the Annex IX as proposed by the European Commission (tall oil, tall oil pitch and pulpwood should remain on the list).

***

Your support on these essential issues in the plenary vote is crucial. In this way, Europe will give a clear signal that the European forest resources will contribute to defossilizing Europe while promoting the development of the forest resources and the entire value chain. The forest sector currently provides 4 million jobs in Europe, contributes to the viability of rural areas and mitigates climate change.

The co-signing organisations are ready to meet with you, should you have any questions or need any clarification.

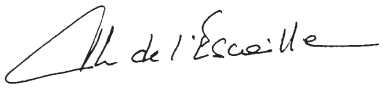
Thank you very much in advance for your kind support in this crucial matter.

Sincerely,

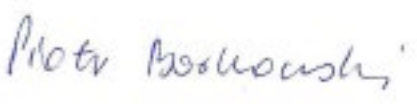
Emma Berglund, Secretary General, Confederation of European Forest Owners – CEPF

Pekka Pesonen, Secretary General, European Farmers and European Agri-Cooperatives – Copa and Cogeca

Thierry de l'Escaille, Secretary General, European Landowners Organisation – ELO



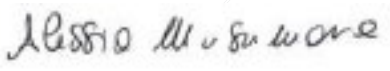
Piotr Borkowski, Executive Director, European State Forest Association – EUSTAFOR



Eric Dresin, Director, European Confederation of Agricultural, Rural and Forestry Contractors – CEETTAR

Silvia Melegari, Secretary General, European Organisation of the Sawmill Industry – EOS

Alessia Musumarra, Secretary General, European Council of Young Farmers – CEJA



Michael Diemer, President, Union of European Foresters – UEF

Leire Salaberria, Managing Director, Union of Foresters of Southern Europe – USSE

16/1/2018

Press Release

Key ways to maximize potential of forest bioenergy to decarbonize Europe underlined

European forestry and agricultural organisations urge MEPs to ensure that the role of forest bioenergy to decarbonize Europe is not hindered when they vote on an EU Commission proposal on the promotion of renewable energy sources (RES).

Forests and the forest-based sector play a significant role in tackling climate change by helping to decarbonize Europe to reach its post-2020 climate and energy targets, whilst also boosting growth and jobs in EU rural areas. Sustainably grown EU forests are an important piece in the puzzle of renewable energy. For example, advanced biofuels are one of the solutions to ensure a more climate-friendly transport sector. It is important that the EU Commission proposal on the promotion of renewable energy sources (RES) does not hinder this.

In particular, the 9 organisations collectively call for:

- All types of wood biomass to be included in the RES Directive as a renewable raw material for biofuels, heat and power, depending on the market context and as deemed appropriate by operators across the forestry value chain, otherwise sustainable forest management and related investments might be undermined;
- Cascade use of woody biomass should remain a voluntary principle. If embedded into EU legislation, it would hinder resource efficiency and innovation, creating excessive red tape and impacting negatively on the market;
- Promotion of efficient use of resources and assurance that the use of waste and residues is not restricted in biofuel production;
- Assurance that products like pulpwood and tall oil remain on the list in Annex IX of the proposal.

Their demands were set out this week in a joint letter to MEPs co-signed by 9 organisations - CEPF, Copa & Cogeca, EUSTAFOR, ELO, Ceettar, Ceja, EOS, UEF, USSE - representing European forest owners and managers, farmers and their cooperatives, the sawmill industry, forest workers, contractors and professionals.

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European Landowners Association (ELO)
Senior Policy Officer: Ana Rocha - ana.rocha@elo.org

THE COUNCIL POSITION:

On 18 December 2017, the Council adopted its position on a directive promoting the use of renewable energy across the EU. This agreement paves the way for the Council to start negotiations with the European Parliament.

The main elements of the Council's general approach are as follows:

- Consumers will benefit from simplified notification procedures for small-scale installations, and the rights and obligations of 'renewable self-consumers' as well as renewable energy communities are now clearly set out.
- Regarding heating and cooling, member states will have to adopt measures to achieve an indicative annual 1 percentage point increase in the share of renewable energy. As existing national systems and installations differ widely across the EU in this respect, this is taken into account in the Council text. In particular, it reflects the specific characteristics of 'cooling' installations in warmer climates.
- In the transport sector, the renewables target for 2030 is set at 14% for each member state, and there is a sub-target of 3% for 'advanced biofuels', for which double-counting will be allowed. This advanced biofuels target has an intermediate binding milestone of 1% in 2025 to increase investment security and guarantee the availability of fuels throughout the period. Electromobility is strongly encouraged by two multipliers of 5x for renewable electricity used in road transport, and of 2x for rail transport.
- The existing 7% cap on first-generation biofuels is maintained to provide certainty to investors. If a member state sets a lower cap, it will be rewarded with the option of lowering its overall target for renewables in transport.
- In order to ensure that Annex IX takes into account the principles of the waste hierarchy established in Directive 2008/98/EC of the European Parliament and of the Council, the Union sustainability criteria, and the need to ensure that the Annex does not create additional demand for land while promoting the use of wastes and residues, the Commission, when regularly evaluating the Annex, should consider the inclusion of additional feedstocks that do not cause significant distortive effects on markets for (by-) products, wastes or residues.
- The directive also clarifies rules concerning the sustainability criteria and greenhouse gas emissions saving criteria that apply to biofuels, bioliquids and biomass fuels.
  - o Biofuels, bioliquids and biomass fuels produced from waste and residues, other than agricultural, aquaculture, fisheries and forestry residues, need only fulfil the greenhouse gas emissions saving criteria set out in paragraph 7 in order to be taken into account for the purposes referred to in points (a=> contributing towards the Union target and Member States renewable energy share), (b=> measuring compliance with renewable energy obligations) and (c=> eligibility for financial support for the consumption of biofuels, bioliquids and biomass fuels) of this paragraph. This provision shall also apply to waste and residues that are first processed into a product before being further processed into biofuels, bioliquids and biomass fuels.
  - o Biomass fuels shall have to fulfil the sustainability and greenhouse gas emissions saving criteria set out in paragraphs 2 to 7 (*Article 26*) if used in installations producing electricity, heating and cooling or fuels with a [ ] total rated thermal input equal to or exceeding 20 MW in case of solid biomass fuels and with a total rated thermal input capacity equal to or exceeding 2 MW in case of gaseous biomass fuels. Member States may apply the sustainability and greenhouse gas emission saving criteria to installations with lower fuel capacity.
  - o 'agricultural, aquaculture, fisheries and forestry residues' means residues that are directly generated by agriculture, aquaculture, fisheries and forestry; **they do not include residues from related industries or processing.**
- Member states will have the possibility of opening up their national support schemes across borders to generators of renewable energy in other member states, but the final decision on this will remain with them. In relation to investments in renewable energy, the Council text, like the Commission's proposal, addresses the stability of financial support by preventing unjustified retroactive changes to support schemes.

THE EU PARLIAMENT POSITION:

On 17 January the European Parliament voted on its position for the revision of the Renewable Energy Directive, part of the European Commission's Clean Energy Package. The Parliament endorsed committee proposals for binding EU-level targets of an 35% improvement in energy efficiency, a minimum 35% share of energy from renewable sources in gross final consumption of energy, and a 12% share of energy from renewable sources in transport, by 2030. This target (35%) should be considered on the basis of

the projected energy consumption in 2030 according to the PRIMES model (simulating the energy consumption and the energy supply system in the EU).

To meet these overall targets, EU member states are asked to set their own national targets (with the possibility to deviate by a maximum of 10% under certain conditions), to be monitored and achieved in line with a draft law on the governance of the Energy Union.

In 2030, each Member State will have to ensure that 12% of the energy consumed in transport comes from renewable sources. The contribution of so-called "first generation" biofuels (made from food and feed crops) should be capped to 2017 levels, with a maximum of 7% in road and rail transport. MEPs also want a ban on the use of palm oil from 2021.

The share of advanced biofuels (which have a lower impact on land use than those based on food crops), renewable transport fuels of non-biological origin, waste-based fossil fuels and renewable electricity will have to be at least 1.5% in 2021, rising to 10% in 2030.

MEPs want support schemes for renewable energy from biomass to be designed to avoid encouraging the unsustainable use of biomass for energy production if there are better industrial or material uses, as carbon captured in wood would be released if it were burned for heating.

The following proposals have been approved by the EU Parliament:

Article 3 – paragraph 2 a (new)

2a. ***Member States shall ensure that their national policies, including support schemes, are designed to conform to the waste hierarchy, as set out in Article 4 of Directive 2008/98/EC and avoid significant distortive effects on markets for (by)products, wastes and residues. To that end, Member States shall regularly review their national policies and justify any deviation in the reports required under Article 18(c) of Regulation …of the European Parliament and of the Council [on the Governance of the Energy Union, 2016/0375(COD)].***

Proposal for a directive
Article 4 – paragraph 4 b (new)

4b. ***By… [six months after the date of entry into force of this Directive], the Commission shall review the Guidelines on State aid for environmental protection and energy 2014-2020 (2014/C 200/01) in order to incorporate fully the general principles laid down in Article 4 of this Directive.***

Proposal for a directive
Article 4 – paragraph 1

1. ***Pursuant to Article 195 TFEU and*** subject to ***Articles 107 and 108 thereof***, in order to reach ***or exceed*** the Union ***and national targets*** set in Article ***3***, Member States may apply support schemes.
To avoid unnecessary distortions of raw material markets, support schemes for renewable energy from biomass shall be designed to avoid encouraging inappropriate use of biomass primarily for energy production if there exists industrial or material uses providing higher added-value, which could include giving priority to the use of wastes and residues. Members States should take into account available sustainable supply of biomass. Support schemes for electricity from renewable sources shall be ***market-based*** so as to avoid ***the distortion*** of electricity markets and ***shall*** ensure that producers take into account the supply and demand of electricity as well as possible ***system integration costs or*** grid constraints.

Proposal for a directive
Article 26 – paragraph 1 – subparagraph 2

Biofuels, bioliquids and biomass fuels produced from waste and residues, other than agricultural, aquaculture, fisheries and forestry residues, need only fulfil the greenhouse gas emissions saving criteria set out in paragraph 7 in order to be taken into account for the purposes referred to in points (a), (b) and (c) of this paragraph. ***However, their production from waste and residues covered by Directive 2008/98/EC shall be in line with the principle of the waste hierarchy as laid down in Directive 2008/98/EC.*** This provision shall also apply to waste and residues that are first processed into a product before being further processed into biofuels, bioliquids and biomass fuels.

On 21 March 2018, on occasion of the EP ITRE Committee Meeting, the Member of the EU Parliament Mr José Blanco López (S&D, ES) gave a brief overview of the ongoing negotiation in the framework of the trilogue.

Mr López underlined that:

- the last trilogue was 'introductory' during which each institution had set out its position and laid a foundation;
- the Parliament's and the Council's positions were too far apart;
- technical meetings took place to bring oppositions closer together and come up with a compromise text;
- the Bulgarian Presidency did a good job and he congratulated the team, even though the positions were too far apart;
- despite the new information put forward by the Commission, the Council had not shifted its position;
- the talks were in the initial 'exploratory phase' and he hoped the Council would align their positions closer.

In light of the trilogue on the *Proposal for a Directive of the European Parliament and the Council on the promotion of the use of energy from renewable sources (recast)* taking place in early May, the European Organisation of the Sawmill Industry is continuing its advocating actions together with representatives the European forest owners and managers, farmers and their cooperatives, forest workers, contractors and professionals, bioenergy industry, district heating industry.

In particular, a new letter was sent to the negotiators **in order to emphasize the risk to create unintended market restrictions due to an extensive application of the Waste Framework Directive**. The Renewable Energy Directive shall not extend the waste hierarchy scope to non-waste (e.g. with a market value) materials such as forestry and agricultural residues and forest industry by-products.

This coalition is expressing concerns on the above mentioned amended articles that de facto will conflict with the principles guiding the EU internal market and limit the competition of the forest based-sector by reducing the possibility to sell their raw material and by-products to a wide range of downstream industries.

Copy of the joint letter is here reported.

Joint letter

To: EU Commissioner Arias Cañete, Energy Minister Temenouzhka Petkova - Bulgarian EU Council Presidency, European Parliament Rapporteur José Blanco López MEP

CC: EU Commission Director-General Dominique Ristori, Bulgarian Deputy Energy Minister Zhecho Stankov, Deputy Permanent Representative of Bulgaria to the EU Maria Koleva, Council Energy Working Group Members, Sean Kelly MEP, Fredrick Federley MEP, Claude Turmes MEP, Hans-Olaf Henkel MEP, Paloma López Bermejo MEP, Dario Tamburrano MEP, Bas Eickhout MEP, Marijana Petir MEP

Object: Articles 3, 4 and 26.1 of the RED II Directive creating unintended market restrictions

Dear Commissioner Cañete, dear Minister Petkova, dear MEP Blanco López,

Representing the European forest owners and managers, farmers and their cooperatives, sawmill industry, forest workers, contractors and professionals, bioenergy industry, district heating industry, we would like to emphasize the risk to create unintended market restrictions due to an extensive application of the Waste Framework Directive and introduction of requirements related to market distortions in various amendments in the Renewable Energy Directive. The waste hierarchy is intended to maximise possible reuse of waste material such as post-consumer wood but explicitly excludes agricultural and forestry materials from its scope (pursuant to article 2 of the Waste Framework Directive). The Renewable Energy Directive shall not extend the waste hierarchy scope to non-waste (e.g. with a market value) materials such as forestry and agricultural residues and forest industry by-products.

The provisions introduced by European Parliament relating to market distortions and the waste hierarchy (RED Article 3(2a), Article 4(1), Article 4(3bis) and Article 26(1)) will de facto conflict with the principles guiding the EU internal market and limit the competition of the forest based-sector by reducing the possibility to sell their raw material and by-products to a wide range of downstream industries. Open market rules should be applied as a common denominator for the value of forest raw materials and by-products. Although, "value" is an arbitrary concept that strongly depends on local, social and economic circumstances. Having to prove a possible "higher added value" would therefore create excessive administrative burden and artificially interfere in free market processes. Finally, relying only on post-consumer wood for energetic use as the waste hierarchy suggests creates serious repercussions in terms of technical feasibility and economic viability. Therefore, those provisions could seriously encounter the EU's ability to achieve its climate and energy objectives.

For the above-mentioned reasons, we are confident that you will carefully evaluate the unintended consequences occurred by the articles 3, 4 and 26.1 and kindly call for keeping them in line with the overall objective of the Renewable Energy Directive and the principles of the internal market rules and an overall policy coherence.

Yours faithfully,

Confederation of European Forest Owners (CEPF)
Euroheat&Power
European Biomass Association (AEBIOM)
European Organisation of Agricultural, Rural and Forestry Contractors (CEETTAR)
European Organisation of the Sawmill Industry (EOS)
European Farmers – European Agri-cooperatives (COPA COGECA)
European State Forest Association (EUSTAFOR)

6.3.2 Inclusion of greenhouse gas emissions and removals from land use, land use change and forestry into the 2030 climate and energy framework: the new European legislative proposal

On 20 July 2016, the European Commission published new legislative proposals aiming at binding annual greenhouse gas emissions targets for Member States from 2021-2030 for the transport, buildings, agriculture, waste, land-use and forestry sectors as contributors to EU climate action.

In particular, the package is composed of the following new legislative proposals:

- Proposal for a Regulation of the European Parliament and of the Council on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement and amending Regulation No 525/2013 of the European Parliament and the Council on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change.
- **Proposal for a REGULATION of the European Parliament and of the Council on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry into the 2030 climate and energy framework and amending Regulation No 525/2013 of the European Parliament and the Council on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change.**
- Communication from the commission to the European Parliament, the council, the European economic and social committee and the committee of the regions a European strategy for low-emission mobility.

According to the new package, Member States will have national emission targets for 2030 expressed as a percentage reduction from 2005 emission levels as well as access to new flexibilities to achieve those targets cost effectively. Collectively, these national targets will give an overall EU reduction of 30% in the sectors covered by the proposal. The 2030 targets range from 0% (Bulgaria) to -40% (Sweden) compared to 2005 levels. As previously anticipated by the EU Commission carbon offsetting from the Land Use, Land Use Change and Forestry (LULUCF) sector will be included under the ESD. The carbon offsetting via LULUCF will be capped at 280 million tonnes CO2-equivalent (Mt CO2-eq) across the EU for the 2021-2030 period, with individual limits set at national level.

According to the EU Commission, the new proposal for a Regulation "on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry into the 2030 climate and energy framework" will support foresters and forest-based industries through greater visibility for the climate benefits of wood products which have a longer life-time and which store carbon from the atmosphere for long periods. Moreover, it will provide a framework for Member States to incentivise more climate-friendly land use.

THE NEGOTIATION PHASE:

On 14 December, the Estonian presidency and the European Parliament reached an informal agreement on the land use, land-use change and forestry (**LULUCF**) regulation. The aim is to reduce overall EU greenhouse gas emissions over the 2021-2030 period through the **better protection and management of land and forests** across the Union.

Overall, the sectors which fall outside the scope of the EU emissions-trading system (ETS) are required to contribute a **30% emissions cut by 2030** compared to 2005 levels. The new regulation provides a framework for ensuring that **emissions and removals** generated by this sector **are accounted for**. This will enable the EU to reach its Paris agreement target to cut emissions by **at least 40% by 2030.**

Siim Kiisler, Minister for the Environment of the Republic of Estonia stated "The EU is putting in place the tools it needs to reach its Paris climate goals. We have reformed our emissions trading system and are working to set binding emission reduction commitments in effort sharing sectors. With today's agreement, our green resources will also help us mitigate climate change. I am very satisfied with today's outcome and hope the member states can endorse it still this year. Tackling climate change has been a priority of the Estonian presidency and with an agreement on ETS, deal on LULUCF and adoption of the Council position on effort sharing, we have managed to deliver more than we dared to hope for".

The text of the agreement provides **EU-wide accounting rules** for LULUCF activities, developed to ensure the proper and consistent accounting of emissions and removals from 2021-2030. As a compromise, and given the lack of current data on wetlands, accounting for this sector will become mandatory for the 2026-2030 period, unless it is found appropriate to postpone the mandatory inclusion by five years in light of the experience gained with the use of the Intergovernmental Panel on Climate Change (IPCC) refinement to the 2006 guidelines for national greenhouse gas inventories.

The **'no-debit rule'** remains the cornerstone element of the regulation. This is a binding commitment whereby all member states will have to guarantee that their total emissions from this sector are in balance and do not exceed CO_2 removals. Afforestation and enhanced supervision of national forests, croplands and grasslands are examples of ways to generate further carbon absorption.

A new EU governance process has been devised for the determination of national forest management reference levels. It has been decided that those levels will be set on the basis of the historical reference period from 2000 to 2009.

The new regulation includes the flexibilities suggested in the original proposal to help member states meet their 'no-debit' commitments. The specific circumstances of member states will be catered for by the additional managed forest land flexibility proposed by the Council. This new compensation mechanism will contain up to 360 million tonnes of CO_2 equivalent and will be available to all member states over the 2021-2030 period. A number of strict conditions must be fulfilled for its use, in order to preserve the environmental integrity of the regulation. Compliance with the 'no-debit rule' by the EU as a whole is the most important of all. Furthermore, EU countries may only receive compensation on the condition that their national forests still generate a sink and up to a pre-established amount calculated for each member state on the basis of their average sink over the 2000-2009 period.

Additional compensation of 10 million tonnes of CO_2 equivalent was granted to Finland for the 2021-2030 period in recognition of the country's special circumstances in this sector.

The formal adoption of this legislation will only occur once an agreement is found in the effort sharing regulation given the links between both legislative acts.

The provisional agreement (*reached by written procedure following the 3rd trilogue in the 'trilogue' negotiation format between the Parliament, Council and Commission*) must now be formally approved by the European Parliament (*likely on occasion of the EP Plenary session in April 2018*) and Council. Following approval, the regulation will be published in the EU's Official Journal and enter into force 20 days later.

THE NEW LULUCF PROPOSAL:

On 24 January the EU Parliament Environment Public health and Safety Committee (ENVI) voted on the provisional agreement resulting from interinstitutional negotiations concerning the Proposal on the Inclusion of greenhouse gas emissions and removals from land use, land use change and forestry into the 2030 climate and energy framework and amending Regulation No 525/2013.

The compromised text on LULUCF explicitly recognises the role of wood products including the corralled substitution effect and propose a reasonable approach concerning the forest reference level. As reported in the text of the Regulation:

- The increased sustainable use of harvested wood products can substantially limit emissions by the substitution effect and enhance removals of greenhouse gases from the atmosphere. The accounting rules should ensure that Member States accurately and transparently reflect in accounts the changes in the harvested wood products pool when they take place, in order to recognise and incentivise the enhanced use of harvested wood products with long life cycles.
- The forest reference level shall be based on the continuation of sustainable forest management practice, as documented between 2000-2009 with regard to dynamic age-related forests characteristics in national forests, using the best available data.

A few considerations concerning the revised legislative text:
Whereas 19: **The increased sustainable use of harvested wood products can substantially limit emissions by the substitution effect** and enhance removals of greenhouse gases from the atmosphere. The accounting rules should ensure that Member States accurately and transparently reflect in accounts the changes in the harvested wood

products pool when they take place, in order to recognise and incentivise the enhanced use of harvested wood products with long life cycles. The Commission should provide guidance on methodological issues related to the accounting for harvested wood products.

Whereas 24: Member States should therefore be granted some flexibility to temporarily increase their harvest intensity in accordance with sustainable forest management practices consistent with the objective set out in the Paris Agreement provided that within the Union total emissions do not exceed removals in the overall LULUCF sector. Under this flexibility, all Member States should be granted a basic amount calculated on the basis of a compensation factor expressed as a percentage of their reported sink in the years from 2000 to 2009 to compensate for its accounted emissions from managed forest land. It should be ensured that Member States could only be compensated up to the level where their forest will no longer generate a sink.

Article 8: Accounting for managed forest land 1. Member States shall account for emissions and removals resulting from managed forest land, calculated as emissions and removals in the periods from 2021 to 2025 and from 2026 to 2030 minus the value obtained by multiplying by five the forest reference level of the Member State concerned. 2. Where the result of the calculation referred to in paragraph 1 is negative in relation to a Member State forest reference level, the Member State concerned shall include in its managed forest land accounts total net removals of no more than the equivalent of 3,5 % of the emissions of that Member State in its base year or period as specified in Annex III, multiplied by five. Net removals resulting from the carbon pools of harvested wood products, except the category paper as referred to in point (a) of Article 9(1), and dead wood of managed forest land shall not be subject to this limitation. 3. Member States shall determine their forest reference level based on the criteria set out in Section A of Annex IV. For Croatia, the forest reference level may also take into account, in addition to the criteria set out in Section A of Annex IV, the occupation of its territory, war time and post war circumstances impacting forest management during the reference period. Member States shall submit to the Commission a national forestry accounting plan, including a proposed forest reference level, by 31 December 2018 for the period from 2021 to 2025 and by 30 June 2023 for the period from 2026 to 2030. The national forestry accounting plan shall contain all the elements listed in Section B of Annex IV and shall be made public, including via the internet. 4. The forest reference level shall be based on the continuation of sustainable forest management practice, as documented between 2000-2009 with regard to dynamic age related forests characteristics in national forests, using the best available data. Forest reference levels as determined in accordance with the first subparagraph shall take account of the future impact of dynamic age related characteristics of forests in order not to unduly constrain the forest management intensity as core element of sustainable forest management practice, with the aim of maintaining or strengthening long-term carbon sinks. Member States shall demonstrate consistency between the methods and data used to determine the proposed forest reference level in the national forestry accounting plan and those used in the reporting for managed forest land. 5. The Commission, in consultation with experts appointed by the Member States, shall undertake a technical assessment of the national forestry accounting plans submitted by Member States in accordance with paragraph 3 of this Article with a view to assessing the extent to which the proposed forest reference levels have been determined in accordance with the principles and requirements set out in paragraphs 3 and 4 of this Article, as well as Article 5(1). The Commission shall also consult stakeholders and civil society. The Commission shall publish a summary of the work carried out, including the views expressed by the experts appointed by the Member States, and the conclusions thereof. The Commission shall, where necessary, issue technical recommendations to the Member States reflecting the conclusions of the technical assessment to facilitate the technical revision of the proposed forest reference levels. The Commission shall publish the technical recommendations. 6. Where necessary based on the technical assessments and, where applicable, the technical recommendations, Member States shall communicate their revised proposed forest reference levels to the Commission by 31 December 2019 for the period from 2021 to 2025 and by 30 June 2024 for the period from 2026 to 2030. The Commission shall publish the proposed forest reference levels communicated by Member States. 7. Based on the proposed forest reference levels submitted by Member States, the technical assessment carried out pursuant to paragraph 5 of this Article and, where applicable, the revised proposed forest reference level submitted under paragraph 6 of this Article, the Commission shall adopt delegated acts in accordance with Article 16 amending Annex IV with a view to laying down the forest reference

levels to be applied by the Member States for the period from 2021 to 2025 and for the period from 2026 to 2030. If a Member State does not submit its forest reference level to the Commission by the dates specified in paragraph 3 of this Article and, where applicable, paragraph 6 of this Article, the Commission shall adopt delegated acts in accordance with Article 16 amending Annex IV with a view to laying down the forest reference level to be applied by that Member State for the period from 2021 to 2025 and for the period from 2026 to 2030, based on any technical assessment carried out pursuant to paragraph 5 of this Article. 9. The delegated acts referred to in paragraph 7 and 8 shall be adopted by 31 October 2020 for the period from 2021 to 2025 and by 30 April 2025 for the period from 2026 to 2030. 10. In order to ensure consistency as referred to in the third subparagraph of paragraph 4 of this Article Member States shall, where necessary, submit to the Commission technical corrections not requiring amendments to the delegated acts adopted pursuant to the previous paragraphs at the latest by the dates referred to in Article 14(1).

Article 9: Accounting for harvested wood products 1. In accounts pursuant to Articles 6(1) and 8(1) relating to harvested wood products, Member States shall reflect emissions and removals resulting from changes in the pool of harvested wood products falling within the following categories using the first order decay function, the methodologies and the default half-life values specified in Annex V: (a) paper; (b) wood panels; (c) sawn wood. 2. The Commission shall adopt delegated acts in accordance with Article 16 in order to amend paragraph 1 of this Article and Annex V by adding new categories of harvested wood products that have a carbon sequestration effect, based on IPCC Guidelines as adopted by the Conference of the Parties to the UNFCCC or the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement, and ensuring environmental integrity. 3. Member States may specify the wood based material products, including bark, within the existing and new categories referred to in paragraphs 1 and 2, respectively, based on IPCC Guidelines as adopted by the Conference of the Parties to the UNFCCC or the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement, and provided that the available data is transparent and verifiable.

Article 11 a (new): Where total emissions exceed removals in the land accounting categories referred to in Article 2 accounted in accordance with this Regulation in a Member State, that Member State may use the managed forest land flexibility in order to comply with Article 4. 2. Where the result of the calculation referred to in Article 8(1) is positive, the Member State concerned is entitled to compensate these emissions provided that: a) the Member State in its Long term low emission strategy submitted in accordance with [Article 4 MMR] has included ongoing or envisaged concrete measures to ensure the conservation or enhancement, as appropriate, of sinks and reservoirs from forests […], and b) within the Union total emissions do not exceed removals in the land accounting categories referred to in Article 2 for the period for which the Member State intends to use the compensation. When assessing whether within the Union total emissions exceed removals, the Commission shall ensure that double counting is avoided, in particular in the exercise of the flexibilities between this Regulation and Regulation [ESR]. 3. […] The following shall apply for the amount of compensation: a) The Member State concerned may only compensate for sink accounted as emissions against their Forest Reference Level; and b) only up to the maximum amount of compensation for that Member State set out in Annex VII for the period from 2021 to 2030. […] 4. Finland may compensate up to 10 million tons of CO_2 equivalent emissions provided that the conditions listed in paragraphs 2(a) and (b) of this Article are met.

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Annex VII: Maximum amount of compensation available under the managed forest land flexibility referred to in Article 11a(3)(a)

Member State	Reported average forest sink 2000-2009 in million tonnes CO2 equivalent per year	Compensation limit expressed in million tonnes of CO2 equivalent for the period 2021-2030
Austria	-5,34	-17,1
Belgium	-3,61	-2,2
Bulgaria	-9,31	-5,6
Czech Republic	-5,14	-3,1
Cyprus	-0,15	-0,03
Germany	-45,94	-27,6
Denmark	-0,56	-0,1
Estonia	-3,07	-9,8
Greece	-1,75	-1,0
Spain	-26,51	-15,9
Finland	-36,79	-44,1
France	-51,23	-61,5
Croatia	-8,04	-9,6
Hungary	-1,58	-0,9
Ireland	-0,85	-0,2
Italy	-24,17	-14,5
Lithuania	-5,71	-3,4
Luxembourg	-0,49	-0,3
Latvia	-8,01	-25,6
Malta	0,00	0,0
Netherlands	-1,72	-0,3
Poland	-37,50	-22,5
Portugal	-5,13	-6,2
Romania	-22,34	-13,4
Sweden	-39,55	-47,5
Slovakia	-5,42	-6,5
Slovenia	-5,38	-17,2
United Kingdom	-16,37	-3,3

On 16 April, the Plenary session of the EU Parliament voted and adopted with 574 votes to 79 and 32 abstentions the Proposal for a "Regulation on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry into the 2030 climate and energy framework and amending Regulation No 525/2013 of the European Parliament and the Council on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change". The voted document reflects the compromised text as agreed on occasion of the interinstitutional negotiations

The Honourable Member of the EU Parliament and leading Rapporteur, Mr Norbert Lins (EPP, DE) gave the following statement "*Parliament has worked to strike a balance between flexibility and comparable accounting rules for the 28 Member States. I am convinced that we have succeeded in strengthening the bioeconomy - wood for house building, furniture and bioenergy (...) With this legislation we are sending out a signal: we want our forests in Europe to continue to be managed sustainably. We want to continue to maintain strong forestry in Europe*."

The text need Council´s formal approval before entering into force.

6.3.3 Revised Directive for Energy Performance of Buildings (EPBD)

On 17 April 2018, the European Parliament has confirmed the agreement with the Council on a revised Directive for Energy Performance of Buildings (EPBD). The updated legislation, voted through with 546 for, 35 against and 96 abstentions, requires Member States to develop national long-term strategies to support cost-saving renovation of public and private buildings, with a view to reducing emissions in the EU by 80-85% compared to 1990 levels. These long-term goals to renovate the existing building stock ensure investment certainty and new financing tools for citizens and businesses, say MEPs.

The national strategies will provide roadmaps to a highly decarbonised national building stock by 2050, with indicative milestones for 2030 and 2040, and measurable progress indicators will have to be put in place to monitor the implementation of the national strategies.

The revised EPBD includes as well two articles that urge Member States to consider fire safety risks and intense seismic activity in building renovations: "*Member States should be able to use their long-term renovation strategies to address fire safety and risks related to intense seismic activity which affect energy efficiency renovations and the lifetime of buildings*".

Supporting electro-mobility. The new directive will introduce electro-mobility requirements for new buildings and those undergoing major renovations, such as the location of at least one recharging point for electric vehicles in buildings with more than ten parking spaces. It will also require the installation of cabling infrastructure for recharging electric vehicles.

Smart tools to increase energy efficiency. The text introduces the "smart readiness indicator", a new tool to measure the ability of buildings to improve their operation and interaction with the grid, adapting energy consumption to the real needs of the occupant. The European Commission will have to develop this concept by the end of 2019. New buildings and existing ones, where heat generators are replaced, must have automated devices to regulate temperature levels, while rules on inspection of heating and air conditioning systems and building automation were tightened up.

"*A more efficient use of energy in our buildings will benefit both the climate and the wallets of European citizens and businesses, and contribute to a sustainable and competitive European economy*", said Bendt Bendtsen MEP, the European Parliament's Chief Negotiator on the revision of the Directive.

The agreement includes an obligation for Member States to develop national long-term strategies for a highly energy efficient and decarbonised building stock and to provide access to financing tools, bringing private money to the market for energy efficiency renovations thereby improving the European building stock.

The revision also tackles other aspects related to the renovation of buildings, like support for a healthy indoor climate, safety, and the improved use of technologies such as building automation and control systems and individual room temperature controls, paving the way for cost-efficient energy savings.

Once approved by the Council, the updated Energy Performance of Buildings Directive will be published in the EU Official Journal and will enter into force 20 days after publication. The transposition period for these new rules into national legislation is 20 months.

6.4. "The value of wood" conference

On 21 March 2018, EOS had the great pleasure to co-sponsor and participate in the International Forum "The Value of Wood," which was held in Brussels on the International Day of Forests. The theme of this year's International Day of Forests highlighted the key role played by forests in creating sustainable cities.

The conference was organised in the framework of the European Forest City Project, an event that was dedicated to the promotion of forestry-based products. The campaign was organized by the communication agency "Revolve Media" in co-operation with a number of Brussels-based organizations, including EOS.

Hosted and moderated by MEP Paul Brannen, the 2018 Forest City Forum was opened by the **video message sent by Karmenu Vella, European Commissioner for Environment, Fisheries and Maritime Affairs**. Mr Vella recalled that "*sustainable forest management is foundamental, we need it to deliver our international goals. It is vital to preserve biodiversity, to combatting climate change and promoting sustainable development. All in line with the UN2030 agenda for sustainable development*". The Commissioner continued emphasising the role of forest and forest products for having "green cities for a greener future". Moreover, he added, "*sustainably produced wood can help us to have a more circular economy*".

On this important occasion, the EOS Member, Mr Hugues Frère, Director of the Hout Info Bois, gave a presentation on "*Using more wood for making cities more sustainable*". He highlighted that the world population of 7.6 billion is expected to reach 8.6 billion in 2030 and 9.8 billion in 2050. The problems created by rampant urbanization are among the most important challenges of our time. Nevertheless, they also represent one of the greatest opportunities—and responsibilities—for the private sector. Besides providing rural communities with immediate economic benefits and recreational opportunities, forests act as a vast carbon sink. Wood products and engineered wood products come from these forests and offer important advantages over traditional materials. After all, wood is a renewable resource, stores carbon, and substantially reduces emissions as compared to traditional building materials such as steel or concrete.

The event ended with a cocktail reception including a virtual reality experience of the Amazon with Conservation International called "Under the Canopy". The video is available at the following link: https://www.conservation.org/stories/vr/Pages/amazon-under-the-canopy-virtual-reality.aspx

Building on nearly 30 years of working in the Amazon, Conservation International and its partners are pursuing the ambitious goal to achieve zero net deforestation in Amazonia by 2020 to protect essential resources, mitigate climate change and increase prosperity for all people.

In addition to the conference, a photo exhibition showing forests from around the world and new architectural designs integrating wood and trees into the urban fabric of cities has been set up during the month of March and June

REVOLVE

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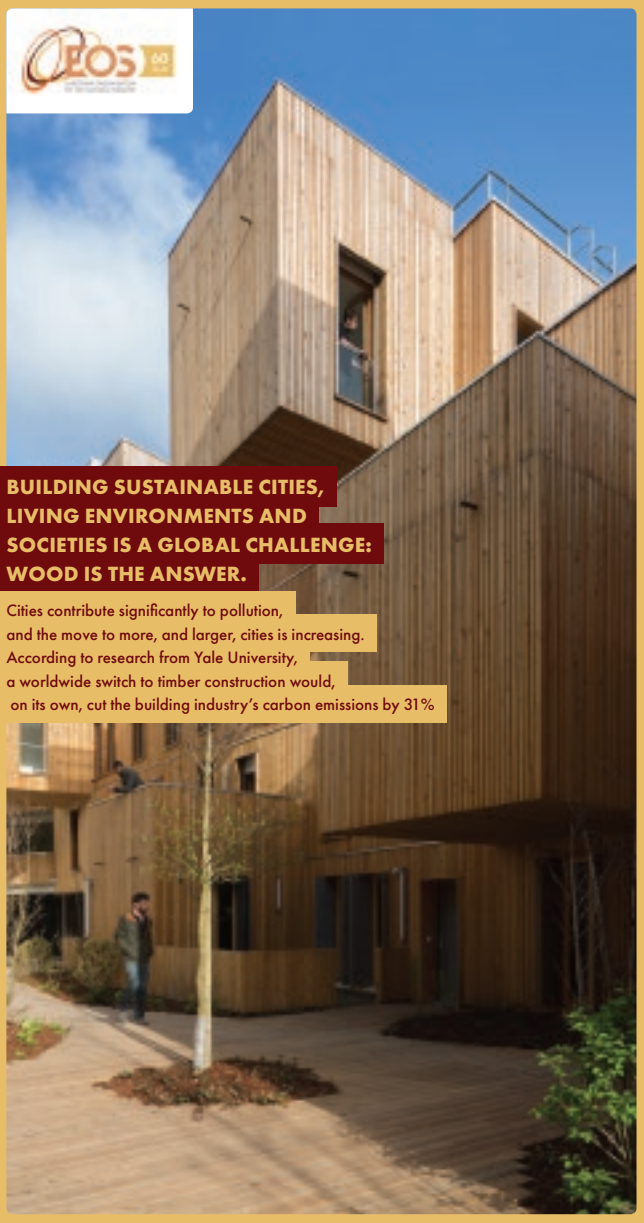
in the *Parc du Cinquantenaire,* a large public, urban park in the easternmost part of the European Quarter in Brussels, Belgium. Also for this 2018 Forest City Project edition, EOS prepared a "CUBE" displaying key messages on the use of wood in tackling climate change and the role of the sawmill industries in developing a sustainable future. Copy of the layout of the CUBE is available in the following pages.

In addition to the participation in the "The value of wood conference", the European Organization of the Sawmill Industry published an article on the Revolve magazine. A copy is available in the following pages.

Lay out of the EOS cube

INNOVATING WOOD SOLUTIONS FOR GREENER CITIES

New technologies and building techniques mean that wood, a material humans have used in construction for millennia, is making a comeback and reducing the carbon footprint of our buildings. Wooden building systems are cost-effective and present unique environmental benefits. Wood is a renewable and carbon neutral resource and its processing is extremely energy efficient. When using wood, construction time can be considerably reduced.



BUILDING SUSTAINABLE CITIES, LIVING ENVIRONMENTS AND SOCIETIES IS A GLOBAL CHALLENGE: WOOD IS THE ANSWER.

Cities contribute significantly to pollution, and the move to more, and larger, cities is increasing. According to research from Yale University, a worldwide switch to timber construction would, on its own, cut the building industry's carbon emissions by 31%

CHOOSE WOOD FOR A SUSTAINABLE FUTURE

- Wood is a renewable material which can act as a carbon sink in buildings.
- Wooden houses in the production phase consume less energy and have lower carbon dioxide emissions than traditionally-built houses.
- In the demolition phase, wood can be easily recycled in line with the circular economy principles
- Buildings in wood meet high requirements in terms of sound and fire safety
- Wood in living environments stimulates, calms and makes people healthier.

CARING ABOUT OUR FORESTS

The European Organisation of the Sawmill Industry through its members is committed to using only legally sourced wood in its production and actively supports sustainable forest management practices. New trees are replanted after the harvesting, which takes place only without harming the environment and neighbouring ecosystems.

www.eos-oes.eu

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MAKING OUR CITIES SUSTAINABLE: BUILDING WITH WOOD

WRITER:

Silvia Melegari

With forecasts predicting that 75% of the world's population will be living in urban areas by 2050, it is paramount that cities become more sustainable – this means using more sustainably-sourced wood building products.

The building sector contributes to 42% of final energy consumption, 35% of total GHG emissions, 50% of extracted materials, and 30% of water consumption in the European Union. Construction and housing therefore play a fundamental role when enhancing societal goals for sustainable growth and citizen wellbeing. ▶

THE TREE, BERGEN, NORWAY. STANDING 49 METRES TALL, "THE TREE" IS HELD UP WITH STRUCTURAL GLUED LAMINATED (GLULAM) TIMBER COLUMNS THAT ARE UP TO HALF A METRE THICK, WHILE CROSS-LAMINATED TIMBER (CLT) IS USED TO FORM THE FLOORS AND WALLS. THE TREE'S DEVELOPER – THE BERGEN AND OMEGN BUILDING SOCIETY – BELIEVES THAT USING TIMBER CONSTRUCTION HELPED TO AVOID THE EMISSION OF MORE THAN 21,000 METRIC TONS OF CARBON DIOXIDE.

IMAGE: © ARTEC AS

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WOODEN HIGH RISE HOUSING, LOUDDEN, STOCKHOLM. © THAM & VIDEGÅRD ARKITEKTER ▲

THE CUBE BUILDING, LONDON, UK. © HAWKINS\BROWN ▲

▶ Today, more than ever, we must find ways to reduce the pressure on our planet's environment and our resources: wood has a key role in making cities more sustainable. The construction sector is very resource intensive and contributes to a large share of greenhouse gas emissions. Increasing the use of renewable materials, mainly wood, in buildings, would increase the bioeconomy.

The Carbon Footprint of Products

The quantity of CO2 and other greenhouse gases released per unit of product during a product's manufacturing and, in some cases, end use and disposal, is referred to as its "carbon footprint". Increases in GHGs in the atmosphere are considered the primary factor in global warming.

Wood has played an important role in the history of civilization. Humans have used it for fuel, building materials, furniture, paper, tools, weapons, and more. Wood is undeniably one of the oldest building materials, with evidence showing homes built over 10,000 years ago using timber. Europe's Neolithic long house (built in 6,000 BC) is certainly an example.

According to some studies, the environmental impacts from construction are related to the renewability and recyclability of the materials used that can help mitigate climate change. The use of wood products can act as a greener alternative to more fossil-fuel intensive materials: substituting a cubic metre of wood for other construction materials (concrete, blocks or bricks) results in the significant average of saving 0.75-to-1 ton of CO2.

Wood is an excellent choice for green construction designs, which minimize the use of energy, water and materials, and reduce the

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PLANTS AND TREES SPROUT FROM THE MODULAR UNITS THAT MAKE UP THIS TIMBER-FRAMED HIGH-RISE, PROPOSED BY ARCHITECTURE FIRM PENDA. THE TORONTO TREE TOWER IS BUILDT FROM CROSSLAMINATED TIMBER MODULES.

IMAGE: © PENDA

FAST FACTS ABOUT BUILDING WITH WOOD:

Wood products contribute to achieve the commitment undertaken by Member States and the European Union to decrease greenhouse gas emissions and enhance removals in line with the Paris Agreement. Sawmill products can play a significant role in decarbonizing the economy if governments seize the opportunity to use wood products in construction and as every day materials. The quantity of CO2 and other greenhouse gases released per unit of product during a product's manufacturing and, in some cases, end use and disposal, is referred to as its "carbon footprint". Increases in GHGs in the atmosphere are considered the primary factor in global warming. Wood products have many environmental advantages compared to non-wood alternatives: indeed the manufacture of wood products requires less fossil fuel than alternative building materials. Several scientific studies had proven notable carbon emissions savings when wood products are used in constructing buildings in place of non-wood alternatives.

subsequent impacts on human health and the environment. Wood is a high-performance and versatile choice for new construction or renovation; it is remarkably strong in relation to its weight and provides good insulation from the cold.

Wood's natural thermal efficiency means timber systems can be more cost-effective in constructing energy-efficient buildings than cement blocks, bricks or alternative materials. Wood is especially favoured in cold climates, where, as an insulating material, it helps reduce heating costs while providing comfortable living conditions. The energy performance of buildings is key to achieving the European energy efficiency and climate objectives, in this respect wood's thermal insulation makes it the material of choice in both cold and warm climates.

Life-cycle assessment studies that compare the environmental impacts of products show that wood building products have a lighter environmental footprint than alternative materials and offer clear environmental advantages at every stage. The manufacture of wood products requires less fossil fuel than non-wood alternative building materials, such as concrete, metals, or plastics.

As a light-weighted material that can be processed easily, wood is the ideal material for renovation and refurbishment, allowing high flexibility for inhabitants and users to adjust buildings to specific needs. Wood buildings are about a quarter of the weight of an equivalent reinforced-concrete structure, which means foundations can be smaller. Timber is a sustainable material and a natural "carbon sink" as trees lock in carbon from the atmosphere. Tall steel-and-concrete buildings tend to have a large carbon footprint, in part because of the amount of material required to ▸

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support them. Using wood could reduce their carbon footprint by 60-75%.

In southern France, the city of Bordeaux has pledged to build 270,000 square feet of wooden spaces per year for the next 15 years. One of the projects leading the way is

Bordeaux has pledged to build 270,000 square feet of wooden spaces per year for the next 15 years.

the Hypérion Tower – an 18-story residential building with CLT floors and walls that will be one of the tallest timber structures in the world when completed in 2020.

Each floor will have around half a dozen apartment units with private balconies and access to a shared garden. Construction is expected to take less than a year, compared to a year and a half for a version made entirely in concrete.

The Hypérion project has an additional goal: to promote the use of locally-sourced wood from the Nouvelle-Aquitaine Region that surrounds Bordeaux. The Hypérion Tower will be a showcase for chestnut and oak from the Périgord, to the north of Bordeaux, which will make up the building's facade and beams, while the panels that secure the facades are made from pine from the nearby Landes Forest thus relying on nearby natural resources and enhancing the regional bioeconomy.

Making sustainable building products

The European sawmill industry is the leading wood processing industry: this industry is on the one hand very traditional and rural – retaining a focus on products which have been used for centuries such as sawn boards and timber frames – and on the other hand it is willing to explore modern and alternative solutions, such as engineered wood products (EWPs).

While overall the production and consumption of sawn wood has been doing relatively well over the last few years, many sawmills see a bright future in the increasingly high sales of EWPs: products such as cross laminated timber (CLT) and glue laminated timber (glulam) have grown massively, and their innovative characteristics have a huge potential in helping tackle the climate change challenges that Europe will be confronted with in the future. For example, CLT buildings have the flexibility to handle the world's strongest earthquakes with no loss of life or structural damage. They have excellent acoustic performance and are very efficient at insulation. Finally, CLT has comparatively low carbon emissions over the life-cycle of buildings and is seen, therefore, as a strong step towards providing greater sustainability.

Engineered wood products, such as cross-laminated timber (CLT), glued-laminated timber (Glulam), and structural composite lumber (SCL) that includes laminated veneer lumber (LVL), laminated strand lumber (LSL) and parallel strand lumber (PSL), all provide consistent quality and strength, changing the way buildings perform structurally and providing a predictable level of fire resistance.

The core business of the sawmill industry remains the production of sawn wood which is increasingly connected to the development of demand in more distant markets in Asia for instance. Conversely, many sawmills are proud to serve the local European markets in rural areas with trade relationships going back many decades, and in some cases, centuries.

PHOTO: THE SEVEN-STOREY, WOOD AND GLASS BUILDING, COMPLETED IN 2013 IN CENTRAL ZURICH. THE BUILDING'S MOST NOTABLE FEATURE IS ITS EXPOSED STRUCTURAL SYSTEM MADE ENTIRELY OF TIMBER, WITH NO METAL CONNECTORS. THE JAPANESE ARCHITECT SHIGERU BAN DEVELOPED THE SYSTEM IN COLLABORATION WITH SWISS ENGINEER HERMANN BLUMER, WHO SPECIALISES IN TIMBER STRUCTURES. HERMANN BLUMER & SHIGERU BAN ARE THE MAIN WINNERS OF THE PRESTIGIOUS SCHWEIGHOFER PRIZE IN 2017. SCHWEIGHOFER PRIZE AWARDS INNOVATIVE IDEAS, TECHNOLOGIES, PRODUCTS AND SERVICES IN ORDER TO STRENGTHEN THE COMPETITIVENESS OF THE EUROPEAN FOREST-BASED SECTOR.

IMAGE: © DIDIER BOY DE LA TOUR, © SHIGERU BAN ARCHITECTS

Skyscrapers made of wood: the future is now

Although steel and concrete skyscrapers typically fill modern city skylines, architects and engineers are now considering the benefits of using wood as a material for tall buildings. Timber is both light and strong, which means it's well suited for tall towers that must hold their own weight. At the same time, it's not as stiff as steel and concrete, which limits the distance it can span while retaining its strength.

Today, wood is lauded for its smaller environmental footprint and the speed with which buildings can be assembled. New types of engineered timber are considerably stronger and allow architects to build bigger and higher, making timber skyscrapers a reality. Wood construction has been propulsed by using cross-laminated timber (CLT) – a strong and light-weight glued wood panel that can be made as large as desired and cut with sub-millimetre precision at the factory, which speeds up construction and reduces waste.

Wooden skyscrapers are being built now across the globe, from Norway to New Zealand, from Canada to Austria.

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- Local territory and global markets, tradition and innovation, rural locations and state-of-the-art facilities: the European sawmill industry has its feet planted firmly on the ground, while looking far into the future in which – thanks to the products it manufactures – it will have played an ever more relevant role in the decarbonisation of Europe.

Wood from sustainably-managed forests

Sustainable wood comes from sustainably-managed forests and is defined as renewable because the forest stewards manage the landscape to prevent damage to ecosystems, watersheds, wildlife and the trees. EU Member States have introduced legal measures requiring reforestation and the protection of woodlands and forests. Today, more trees are planted than felled: European forests are growing. Sustainable forest management offers the opportunity to mitigate climate change and to contribute to sustainable development.

The European Organisation of the Sawmill Industry (EOS) is a Brussels-based non-profit association representing the interests of the European sawmilling sector on European and international level. Through its member federations and associated members, EOS represents some sawmills in 12 countries across Europe (Austria, Belgium, Croatia, Denmark, Finland, France, Germany, Latvia, Norway, Romania, Sweden and Switzerland). Together they produce products such as sawn wood, decking, flooring, joinery, fencing, engineered wood products (EWPs), representing 80% of the total European sawn wood output. The European sawmill industry has a turnover of almost €40 billion and employs over 259,000 people across the European Union.

6.5 The Cascading use of wood

Background

In July 2016, the EU Commission published a study on the Optimised Cascading Use of Wood. This study aims to define the cascading use of wood and to assess the environmental and socio-economic impacts of cascading. Other primary objectives are related to the identification and analysis of the barriers preventing cascading and the evaluation of possible measures that can be adapted to local conditions so they can be applied throughout the European Union.

Cascading use of wood is described as a tool for improving the efficient use of resources by using residues and recycled materials to extend total biomass availability within a given system. Cascading at the market level (sectors and products) can be quantified through wood flow analysis.

The study underlines that "*improving the cascading and resource efficient use of wood requires interventions all throughout the wood flow. Identified measures to promote the cascading use of wood focus largely on the recovery of post-consumer wood in line with existing circular economy and resource efficiency initiatives. However, strong efforts are also needed to address the current imbalance between material and energy uses of industrial residues, where a more significant potential for cascading exists*".

In the framework of the "Closing the loop - An EU action plan for the Circular Economy", the EU Commission highlights that a cascading use of renewable resources, with several reuse and recycling cycles, should be encouraged where appropriate. "Biobased materials, such as for example wood, can be used in multiple ways, and reuse and recycling can take place several times. This goes together with the application of the waste hierarchy (including for food - see section 5.2) and, more generally, options that result in the best overall environmental outcome. National measures such as extended producer responsibility schemes for furniture or wood packaging, or separate collection of wood can have a positive impact". The Action plans announces that the Commission will work on identifying and sharing best practices in this sector and promote innovation.

6.5.1 Breakfast meeting on "The cascading use of biomass: a crucial topic for wood markets".

On Wednesday, the 21 February 2018, the Honourable Member of the European Parliament, Mr Christofer Fjellner (Sweden), hosted a "breakfast meeting" in order to discuss "The cascading use of biomass: a crucial topic for wood markets".

The European Organisation of the Sawmill Industry had been invited to attend the panel discussion and to give a short presentation explaining the challenges from a sawmill prospective on a possible legislative application of this principle.

Having taken into considerations that all EOS Members object to a legislative application of the cascading use of wood but considering that few Members are open to the possibility to support the cascading use of wood principle, the EOS SECRETARIAT HAS PREPARED THE FOLLOWING CONCLUSIONS:

- At EU level it may be very difficult to find a uniform application of the cascading use because appropriate solutions may change depending on market and regional circumstances.
- Morever, controlling of specific cascading cycles could be very challenging, as the biomass flows circulate among several operators, sectors and countries.
- Including the cascading principle into the legislation risks of creating rigid structures that directly influence the market development and inhibit innovation.
- We should take into consideration the scientific evidence given in the studies related to the cascading use of wood principle not for regulating the market but for boosting innovation on new application and use of wood residues and favouring the production of new bio-products.
- Policy makers and the forestry sectors should engage in identifying solutions for increasing the potential supply of wood from EU forests in a holistic approach while securing environmental and social demands on the ecosystems.
- Investing in wood mobilisation – including recycling solutions for ensuring an enhanced sustainable supply of raw materials is a key tool.

Extract od the CEPF summary of the event held on 21 February 2018.

On 21 February MEP Christofer Fjellner (EPP, SE) hosted a breakfast debate in the European Parliament on the cascading use of woody biomass. The event gathered approximately 70 participants from the EU institutions, science and stakeholders around Europe. The event was organised by the Confederation of European Forest Owners (CEPF).

In his opening remarks, **Member of the European Parliament, Mr Christofer Fjellner** looked back at the debates during the Indirect Land Use Change (ILUC) Directive and stressed that policy-makers should not be put in the situation where they have to decide what is the most valuable use of wood in the future. These decisions should be done based on market demand and supply and local circumstances. Moreover, Mr Fjellner informed about the negative consequences of a Swedish law on the cascading use of wood, which was withdrawn because the principle could not be translated in well-functioning practice.

Mr Peter Handley, from the European Commission, informed the participants about the background and purpose of the upcoming guidance to be launched during the second half of 2018. The mandate for the guidance lies in the Circular Economy Action Plan and the aim of this document is to facilitate implementation of different EU legislations, not only on waste but also on climate and energy, including the recently agreed Regulation on Land Use, Land Use Change and Forestry (LULUCF) and the updated Directive on Promotion of Energy from Renewable Resources (REDII). Moreover, the guidance aims at supporting the ongoing update of the EU Bioeconomy Strategy and the further development of the EU Plastic Strategy presented by the Commission at the beginning of the year. The guidance will be focused on woody biomass, will follow a value chain approach (from forest to wood end use) and will gather best practices taking into account recent innovations. In his speech, Mr Handley highlighted the non-binding nature of the document and addressed the worries that cascading use of wood would be embedded into a legislative proposal. He informed that stakeholders will be consulted in the preparation of this guidance and a stakeholder event will be organised by the Commission on 13 April. Forest owners' representative, Mr Gustav Tibblin from Södra, expressed his relief to hear that there is no intention to legislate on the cascading use of wood and provided arguments to support these views. Mr Tibblin reminded the participants that different parts of one tree are used for different purposes. An average Swedish forest owner receives 70 EUR/m^3 for the high-quality timber from the tree and 35 EUR/m^3 for the pulp wood, whereas the tops and branches and low quality wood is sold to bioenergy for 5 EUR/m^3. It became clear that due to these differences in price of different wood qualities, bioenergy is not competing with other uses and should be seen as a complementary product.

A scientific view on the topic was provided by **Ms Laura Sokka from VTT Research Centre of Finland**. Ms Sokka presented different definitions on the cascading use of wood and noted that there is no commonly agreed definition. In addition, Ms Sokka talked about a few case studies showcasing wood flows in Finland and the Netherlands. In the latter case, imports play a much bigger role than wood flows from raw material production. Ms Sokka concluded that the cascading use is a good principle for supporting circular economy and more efficient biomass use but the geographical boundaries of the assessment greatly impact its results.

Ms Silvia Melegari from the European Sawmill Industry explained that wood removed from sustainably managed forests can contribute to tackle climate change in line with the Paris agreement and is processed extremely efficiently by sawmills leaving almost no waste. Sawmills are a zero-waste industry. Furthermore, she reminded that wood availability is not only theoretical but depends on many factors on the ground (economic and environmental) and addressed the importance of keeping the non-binding nature of the upcoming guidance.

Ms Fanny-Pomme Langue from CEPF noted that while the cascading use principle may be a valuable concept for the forest industry to increase its resource efficiency, it is important to hear the Commission confirming that there is no plan to regulate the cascading use of wood. However, she questioned how this approach fits with the recent attempt by the European Parliament to embed the cascading use of wood into the new Renewable Energy Directive by conditioning bioenergy support schemes to non-competition of uses. This approach would hinder competition and innovation of the forest sector. Ms Langue concluded that this event has shown the complexity of the issue of cascading use and that the coming debate should take this complexity into account and identify pragmatic solutions.

6.5.2 Guidance on the cascading use of wood

On 28 February the EOS Secretariat had a bilateral meeting with DG GROW on the "cascading use of wood guidelines". Indeed, the Commission started up work to deliver on the Circular Economy Action Plan commitment to develop a guidance on the cascading use of biomass.

The most relevant information provided on this occasion can be summarised as follows:

- The EU Commission has confirmed the non-binding nature of the guidance on cascading of wood biomass.
- Until now, there has been a general lack of consensus on how to define cascading use of wood, but common elements in the different conceptual understandings can be identified. Most of the definitions of cascading use of wood include material down-cycling, closed-loop recycling, and material up-cycling. The concept of cascading utilization is mostly mentioned in the context of biomass or bio-based materials, although the cascade chain concept might be applicable to the utilization of all resources.
- On the basis of the above-mentioned elements, the EU Commission is evaluating to change the purpose of the guidelines possibly focusing on "resource efficiency" and on "the contribution of the woodworking chain in the circular economy". The circular economy policy suggests closing material flows in productive systems to maximize the utilization of available resources.
- The EOS Secretariat has been invited to include in the guidelines the sawmill sector as best practice for a "zero waste" industry. In addition to the general overview that will be prepared by the EOS Secretariat, EOS Member's companies are invited to provide concrete examples on how the sawmill by-products are used -reprocessed and/ or sold to other wood-based industries.
- It was anticipated that an online survey would soon be launched by DG GROW aiming at collecting best practices examples. Best practices will not in principle be addressed to all stakeholders across Europe. Considering that conditions across Europe differ, best practices will rather be specific and it will be made clear under which conditions they are applicable

On 13 April 2018, the EOS Secretariat attended the correlated stakeholder event organised in Brussels in order to give a preliminary presentation of the main survey's findings.

Workshop information provided by the EU Commission

Scene setter

Materials and products made from woody biomass play an essential role in our daily lives and their production forms a cornerstone of the economy in many Member States. For a long time, the utilisation of woody biomass as raw material has provided it a relatively high added value in the wood-based products, while its full valorization, reusing woody biomass products and/or recycling them once they have become waste have not been optimal in all aspects.

The Paris Agreement to limit the increase of the global temperature below 2 degrees of Celsius by 2050 sets stringent demand for the EU to radically reduce its greenhouse gas emissions by 80-95% from 1990 level. This will require the transition to a low-carbon, circular economy, where industries based on woody and other types of biomass will play an important role.

To contribute to the global climate change mitigation effort and also meet increasing demand for bio-based raw materials, forest-based woody biomass will need to be used more resource-efficiently and sustainably in order to meet increasing demand for bio-based raw materials. In this context there is a need for conducting and applying more research

and innovation, strengthening of regional industrial ecosystems and value chains, and engaging with stakeholders and resource holders (e.g. foresters), civil society and public bodies, as well as consumers.

In the Circular Economy Action Plan, the Commission has committed itself to promote efficient use of bio-based resources through a series of measures, including non-binding guidance on the cascading use of biomass, sharing good practices and making good use of research and innovation. The Commission is currently carrying out a consultation with the stakeholders on this issue.

Objective of the project

The non-binding, non-regulatory guidance contributes to the EU circular bio-economy, in which the value of products, materials and resources is maintained in the economy for as long as possible and the generation of waste is minimised. It will present good practices and research from the various value-chains and systems with the aim of sharing knowledge and enabling new approaches to stimulate resource efficient and sustainable uses of woody biomass at all stages of its lifecycle.

Objective of the workshop

The workshop aims at show-casing existing practices and should identify further technological, economic and social opportunities and tools to develop current and emerging applications for the use of woody biomass, and cooperation along the value chain. This includes existing and future technological advances, funding and investments, cooperation to address the systemic gaps and consumer engagement tools strengthening uptake of better practices.

Cascading refers to a resource efficient and sustainably-driven use of woody biomass, optimizing its value in increasingly parallel and/or circular valorization schemes. Circular aspects such as recovery, product reuse and recycling are part of this broad concept. Technological, R&I and industrial advances in processing and management of woody biomass flows and better use of side streams, strengthen competitiveness and minimise waste and other environmental externalities. In preparation of this workshop, we invite participants to reflect on their own about **the two main themes.** *(=>These are also the themes the chairs in the different sessions of the workshop will use for the discussion).*

1. Identification of existing and emerging good practices:
- What is your experience with existing good practices of efficient and sustainable utilization of woody biomass at various stages of the woody biomass value chain?
- Based on existing approaches and upcoming findings from the research, R&I and/or technological and industrial developments, what are the key improvements in your area? Which good practices would you consider important for the woody biomass value chain?
- Are the business-to-business synergies enough to stimulate resource efficient and sustainably-driven uses of woody biomass? What about emerging uses, their financing and their uptake? If so, which examples would you mention?
- Are designers, architects and consumers engaged at early enough in the development of materials, products and applications? If so, which examples would you mention from your experience?

2. Needs for further research and innovation:
- On which aspects do we need more research and innovation?
- Is there enough research on enablers for maximising woody biomass material utilization in the economic system? Should designers, consumers and other stakeholders be systematically integrated to the development phase and how would that help?
- In the light of the upcoming adoption of the more ambitious recycling targets for wood packaging waste (25% by 2025 and 30% by 2030) do we need research, innovation and demonstration actions or other instruments, for better collection, sorting, upcycling, processing and management of residues? If so, on which aspects?

In the framework Guidelines for the cascading use of woody biomass, an EOS response has been prepared in order to present our Industry as "zero waste" industry and explaining the reasons why it is impossible to apply the cascading principle in the sawmill process. In particular, the document highlights the sawmill investments on new technologies for increasing the production of lumber and the quality of the by-products produced. This reflects the sawmill commitment in the efficient use of the wood resources. Additionally, EOS calls for boosting innovation on new applications and uses of wood residues and favouring the production of new bio-products.

Reported below, copy of the EOS response submitted to the EU Commission on 6 April 2018.

A zero waste industry: the European sawmill industry

Key Information

Sawmill Industries operate according to the resource efficiency principle by maximising the added value of wood resources in a zero waste production circle. Indeed, the sawdust and other sawmill residues are alternatively processed into other wood-based products or used for the bio-energy production. Co-generation facilities also produce power for the operation and may also feed excess power into the grid. Bark can be burned for heat and power or used for landscaping. Wood pellets from sawdust offer very performing and clean solutions for residential heating. The economic value of biomass uses - including residues - varies between countries and specific circumstances.

Nowadays, sawmill residues (such as sawdust, shavings, chips and bark) are classifiable as by-products because although these are not the primary aim of the production process, they have a market value.

Chips for pulp, panels and other kinds of residues move through industrial markets. Bark, hog fuel and shavings can be sold through industrial markets or retail markets for mulch and animal bedding. These are often sold bagged in garden centres or farm supply stores or by the pick-up truck load at the mill. Pulp-quality chips usually command the highest prices, so sawmills located near pulp mills will usually realise higher revenues for their residues. Sawmills without access to chip markets will earn less from their residues. Prices for sawmill chips vary with location and market conditions. Since pulp markets and lumber markets are not perfectly correlated, the supply of chips and the demand for them is often not in equilibrium.

Wood ash (biomass that remains after the sample has been incinerated) and particles can be used to manufacture bricks, cement blocks and slabs, roof planks, exterior wall panels, highway noise barriers, and asphalt. Wood ash historically was used to manufacture cinder blocks. Currently this sawmill by-product is sold and used as a soil ameliorant.

Modern sawmills are highly mechanized, highly technical, and highly efficient. Lasers guide logs on tracks that whip by at high speed, scanners determine how to customize and optimize cuts on individual logs, high speed digital cameras and sensors increase precision. These machineries allow sawmill to maximise the output of sawn lumber out of a log and the quality of the by-products produced.

The cascading use of wood is generally defined as a more efficient use of resources by giving priority to the material use of wood before it is transformed into energy, e.g. making energy recovery the last step in the use of wood after it has

been used once or several times as a product. However, enabling the use of wood multiple times before combustion will imply that the amount of waste wood for energy fuel generation decreases locally, and alternative sources need to be identified. In some cases energy use may be the most efficient use of wood, due to supply volumes, or lack of suitability for material use. Given the widely differing situation across Member States and regions, a unique application at EU level wouldn't be feasible.

> The "cascading use of wood" principle should not be a tool for direct intervention or regulation of market transactions of sawmill by-products / residues. Including the cascading principle into the legislation risks of creating rigid structure that directly influence the market development and inhibit innovation.

The scientific evidence given in the studies related to the cascading use of wood principle should not be used to regulate the market but to boost innovation on new applications and use of wood residues, favouring the production of new bio-products and creating favourable market conditions to enhance recycling of post consumer wood.

Sawmill Business Model

The term "waste" is largely obsolete in the context of today's European sawmill Industry. Logs brought to sawmills are converted totally to useful products, leaving no waste. In the past years this industry has made remarkable investments in technology and new product development maximising logs use, reducing the production of wood residues and enhancing the correlated use.

When a log is received into a saw mill the most valuable parts of its cross section are used as structural timber. Construction-grade timber and engineered wood products are some of the highest value products which can be produced out of logs. The remaining streams of wood residues may consist of bulk pieces, hogged wood, sawdust, shavings, trimmings, bark and woodchips. The volume of mill residues available for further processing depends on the wood species processed, standard of processing equipment, log quality and dimension, production methods, grading, storage, and drying.

Considering that sawmills residues make up around 15% of sawmills profit, one can easily conclude that being able to place residues in the market is vital for many businesses. Indeed, the profitability of many mills often lies in the one-digit range. The economic arena in which sawmills operate is more and more competitive: after struggling for some years in the aftermath of the global economic crisis of 2007-2008, the production of the sawmills industry has overall recovered. However, since the beginning of 2010, according to Eurostat, around 6,000 have shut down in Europe. The sector now consists of around 34,000 sawmills, which is a drop of over 15% since 2010.

In the sawmill industry, maximizing logs' use is of paramount importance. Sawmill operators are increasingly looking for technologies that enable them to efficiently process sawn timber into value-added products. Manufacturers of sawmilling machinery are rising to this challenge with new high-tech, high-efficiency systems for maximizing sawn timber yield and detecting key characteristics in individual timbers and logs. The sector is now characterized by advanced operating techniques all along the production line such as thinner saw-blades, computer-controlled routing, sawing systems and other scrap-cutting improvements. Moreover, the use of automated scanning technology that looks for internal defects (that the human eye can't detect) and makes sure the product meets quality standards, has been introduced in sawmill plants. Cameras act as eyes for computers to oversee the production while scanners help to determine how to process each piece of lumber to get the best quality and value out of the product.

Sawn products are one of the most valuable recyclable materials because they can be transformed into a wide variety of secondary products (*such as chipboard, oriented strand board and fibreboard manufacture, bedding products for*

animals play surfaces and pathways remanufactured products - eg fibre composites). Moreover, wood-framed buildings, especially those with heavy timbers and beams have "stick-by-stick" construction that lends easily to the deconstruction process and have highly versatile reuses.

Sawmill residues are clean, and consistent in form and size. They are well utilized in commonly for panels production; pulp, board and pellet production, compost, playground cover, livestock bedding and energy generation (sawmill industry is already a major producer and consumer of renewable energy).

Depending on market demand, wood chips are largely sold as raw material to the pulp industry while sawdust is sold either as a raw material to the particle board industry or used as a renewable fuel. Bark is normally used to fuel the heat production within the sawmill together with varied portions of sawdust.

As previously mentioned, chips and sawnwood prices follow different dynamics. High demand from pulp industry may push up chips prices even if sawnwood prices are low. However, small sawmills often process many species, which may also be a problem for a pulp mill, especially if the sawmill saws both hardwoods and softwoods. So small sawmills may not be able to take advantage of the pulp chip markets even if they are located within delivery distance of a pulp mill. They have to dispose of their residues in other ways, for instance bio-energy.

There is a long list of products that can be derived from sawmill residues, employing an array of different technologies. As example: finger-jointing allows the use of end-trimmings or other short sections of wood to produce reconstituted lumber, a relatively high value product; the technique results in bonds that as strong as the wood itself. Similarly, edge-gluing of narrow strips of edge trim from lumber production can be used to create furniture panels or blanks for a wide range of applications. Edge and end trimmings would otherwise be chipped or shredded for use in making paper, fiberboard, particleboard, or bioenergy.

Energy products are of increasing interest to developers and regulators at present, due to mounting social and political pressure to reduce Greenhouse Gas (GHG) emissions. The combustion of biomass for energy is recognised under the Kyoto Protocol as being neutral in terms of GHG emissions. Wood residues combustion offers opportunities to reduce GHG emissions by replacing fossil fuels. When a sawmill is able to meet its own energy need, the excess energy is then available for sale to local power grids.

The heating or calorific value is a key factor when evaluating the applicability of a combustible material as a fuel. The heating value of wood residues depend on the species, parts of the tree that are being used (core, bark, stem, wood, branch wood, etc.) and the correlated moisture content. The moisture content of the wood residues in an industry depend on the stage where the residue is extracted and whether wood has been dried before this stage.

Nowadays a large number of private homeowners have invested in a pellet heating (pellet fuel appliances). Technically, pellets can be produced either using sawdust (a clean by-product of the sawmill) or recycled wood. But if the use of sawdust is limited to material applications, pellets producers will only have to use recycled wood.

Recycled wood included post consumer wood, treated wood or painted wood; burning these materials can produce noxious, corrosive smoke and fumes. Manufacturing and burning wood pellets should remain an important part of the mix of renewable energy options. Wood pellets are a "low-cost - low-carbon alternative" to coal. In addition, wood pellets are lower in sulfur, nitrogen, ash, chlorine, and other chemicals than coal and traditional fossil fuels.

The event was structured providing a general overview of industrial solutions that can be considered an efficient use of the wood resources in line with the objectives of the EU Commission Circular Economy package. The large majority of the best practices presented during this workshop were examples of new advanced bio-economy solutions, a few others were focused on possible applications and re-use of post consumer wood. As mentioned by the EU Commission, the non-binding, non-regulatory guidance should contribute to enhance the development of a circular bio-economy, in which the value of products, materials and resources is maintained in the economy for as long as possible and the generation of waste is minimised.

No specific definition of "cascading use of wood" was provided and speakers were free to give their own interpretation of a "cascading approach".

The EU Commission stated that keeping wood products in the value chain is in line with the European commitment to reduce emission and increase the environmental benefits of using wood. It was mentioned that the services of the EU Commission are carrying on consultations in order to prepare a **"Low emissions strategy"** in the framework of the commitment taken in the Paris agreement.

Timeline: Ms Malwina Nowakowska, Deputy Head of Unit of DG Grow, informed that the guidelines on cascading use of wood are expected to be published in the second half of the year and an official presentation will be made on occasion of the Raw material week that will be held in Brussels in November 2018. Considering that in the framework of the correlated online consultation the EU Commission didn't receive a sufficient number of answers, stakeholders are invited to share inputs for one further month.

Take Home Messages:

Borregaard operates the world's most advanced biorefinery. It produces advanced and environmentally friendly biochemicals and biomaterials that can replace oil-based products. The Borregaard Group has 1080 employees in 16 countries. Borregaard has one of the largest and most innovative research divisions in organic chemistry and wood chemistry. Environmental issue and market conditions forced Borregaard to search for other strategy=> they were biorefinery before this word was invented. The company had strong financial owners from 1986 enabled restructuring of the global lign market.

The interdependence of the wood sub-sectors creates de fact a circular use of the wood resources and fibers.

The transition to a "**recycled-based economy**" depends not only on the effort and enthusiasm of professionals and policymakers but also very much on the acceptance and involvement of consumers. Products made using post-consumers wood are seen as "less valuable and less performing" than solid wood products.

The overall objective of the **CaReWood project** is to introduce an upgrading concept for recovered solid timber as a source of clean and reliable secondary wooden products for the European industry. The CaReWood project aims at developing a business model for cascade use of wood recovered from building renovation and demolition, the furniture sector and the packaging and transport industries. Drawing upon the experiences of the paper cascade value chain, the wood cascade should be characterized along the entire value chain in order to derive new criteria for evaluating the resource efficiency of products using cascaded wood materials. The cascading practice is still the exception in today`s Europe, where most waste wood is either chipped to produce particle boards or incinerated; it would make more sense to reuse salvaged wood several times over. Test results show that it is sufficient to remove only a few millimeters of the outer layers and the recycled timber is free of undesirable substances ("*whatever the species of wood, and regardless of whether it was treated with wood preservatives or coated with paint or varnish*").

The **Circular Change platform** is a private nonprofit organization, collaborating with a strong network of international partners, in order to create a competence network to assist in a successful transition to the Circular Economy, embracing economic, societal and environmental dimensions. On behalf of the Circular Change platform, Mr Korpar explained that in Slovenia the concept of circular economy was virtually unknown in the mainstream until 2015, but it has now firmly established as part of policy discussions. Slovenia is one of the largest exporters of roundwood in Europe, and programmes devised over the last few years are helping the wood sector grow again after the global economic crisis. The project "Wood is Beautiful" contains measures which should lead to better utilisation of wood (one of the pillars of the programme is wooden buildings). Another project CEL.CYCLE aims to exploit the potential of biomass for development of advanced

materials and bio-based products, by creating new value chains for cascading use of biomass.

An interesting presentation was given by Mr **Ruut Louwers** of Interreg North West Europe. Interreg NWE is one of the instruments to implement the European Cohesion Policy. Its purpose is to reduce disparities between the various regions in North-West Europe. The EU's most recent treaty, the Lisbon Treaty, adds another facet to cohesion, referring to 'economic, social and territorial cohesion'. The idea is that cohesion policy should also promote more balanced, more sustainable 'territorial development'. In the 2014-2020 budgetary period, the links between cohesion policy and the other EU policies contributing to regional development are stronger, namely rural development and fisheries and maritime policy. The programme fosters transnational cooperation to make Northwestern Europe a key economic player and an attractive place to work and live, with high levels of innovation, sustainability and cohesion). One of the priorities of the programme is resource and material efficiency.

Of particular interest is the project Towards Adhesive Free Timber Buildings (AFTB). The project addresses the wasteful and harmful use of toxic adhesives in the manufacturing of Engineered Wood Products (EWPs) by the construction industry. University, industry and the public sector will cooperate to demonstrate new adhesive free EWPs using new technology, encouraging and enabling market uptake across North West Europe (NWE). In the long-term, the project aims to result in the production of 1 million m^3 of adhesive free products and remove 6000 tonnes of the toxic adhesives currently used in manufacturing. The adhesive free products will be 100% reusable and recyclable.

The EOS Member Mrs Helena Sjögren of Skogsindustrierna gave a presentation about innovation clusters between SMEs and large companies. She reminded the audience that woodworking industries are already very resource-efficient. All parts of the harvested tree find an application in various segments of the industry. Branches and tree stumps left after final felling can also be used for bio-energy. She presented "**BioInnovation"**, a strategic innovation programme financed by VINNOVA, The Swedish Energy Agency and The Swedish Research Council Formas, and by several organisations.

This programme contains four overall targets.

1. New bio-based materials, products, and services;
2. Create new forms of cross-boundary cooperation;
3. Create systematic learning;
4. Create conditions for politicians and government agencies to make decisions that support the conversion to a bio-based economy.

Ms Sjögren reckoned that both SMEs and large companies are innovating through. The various segments of the woodworking industries need each other so collaboration is natural. This is a process that is also developing the cascading use of wood. However, she strongly cautioned against the introducing legislation on the cascading use of wood. By legislating, innovation is stifled. The focus of legislators should not be imposing further administrative burden on companies, but rather helping the sector bridging the gap between a demonstrative innovations and innovations that can be applicable across broader segments of the industry.

Mr **Harald Mauser**, chair of the woodworking industry panel, wrapped up by emphasizing that the Woodworking industries are already very resource-efficient; they have to keep momentum, and ensure that cross-sectoral communication and collaboration remains and possibly improve. Regarding the development of best practices, the fast-paced change that is undergoing the industry can mean that what is a best practice today will not be such in the space of some years. A EU wide waste legislation would be helpful. The wood-packaging recycling targets under discussion, he argued, are not very ambitious, and in a number of countries these targets have already been exceeded. A non-binding and flexible approach on cascading use of wood might be appropriate.

6.6 Initiative Report on Europe's woodworking competitiveness strategy by the European Economic and Social Committee

In December 2017, the European Economic and Social Committee (EESC), consultative body of the European Commission the European Commission decided to draw up an Initiative Report on Europe's woodworking competitiveness strategy. The EESC contributes to strengthening the democratic legitimacy and effectiveness of the European Union by enabling civil society organisations from the Member States to express their views at European level.

In the framework of the revision of the European Forest Strategy expected for 2018 and in the light of the European Renewed Industrial Policy, this informative report aims at contributing to various aspects of these two documents and calls for appropriate policy actions in order to support the woodworking industry to succeed in the rapidly evolving global manufacturing landscape.

It moves from the assumption that the European wood industries have become more complex due to globalisation, production assortment and the development of technologies. Threats to the European woodworking industry can take the form of technical change, competitors with lower costs and lack of raw materials. In this respect the European wood industries face challenges but also opportunities in connection with digitisation, opening the way to improved productivity, product quality and higher qualification levels of the workforce. At the same time the woodworking sector also has many strengths and opportunities: closeness to markets, use of renewable and sustainable sourced material, excellent technology and infrastructure, capacity to innovate etc.

Although a study group made up by members of the EESC will elaborate the report and the recommendations to be addressed to the EU Institutions, EOS has been selected as consultative expert for the group, therefore the EOS Secretariat can provide concrete advice to be included in the Report.

In the framework of this initiative, on 9 April 2018 a public hearing was organised in order to collect input directly from representatives of the sectors. The EOS Member Mr François De Meersman, Bois Confederation (Belgium) gave a presentation on the major challange that the Belgium hardwood sawmill are facing particularly due to a lack of accessible raw materials. Mrs Brose from the European Federation of the Parquet Industry (FEP) enforced the message gave by Mr De Meersman explaining that the most commonly used wood flooring material is oak and currently the parquet industry is facing a shortage in oak supply.

The wood industries have been described as an important sub-sector of the overall bioeconomy. Wood-based bioeconomy can be defined as a bio-based circular economy that uses lignin-containing and, therefore, hard parts of stem, branches and twigs of plants such as trees and scrubs. The wood-based bioeconomy has a high relevance for both material and energetic uses because there is no direct competition with food production unlike the agriculture bioeconomy. Moreover, on occasion of this event, it has been stressed that increasing the demand for wood products can consequently play a decisive role in the global carbon cycle and the fight against climate change. In particular, the EESC Members underlined the woodworking industries can play a significant role in decarbonising the economy if governments seize the opportunity to use wood products in construction and as everyday materials.

Other speakers of the hearing included: Mr. Mindaugas Maciulevičius, EESC member, President of the study group, Mr Marian Krzaklewski, rapporteur of the Information Report on "Europe's woodworking competitiveness strategy", Mr Patrizio Pesci, CCMI delegate, co-rapporteur of the Information Report; Professor Wojciech Krzaklewski,

professor of Forest Ecology and Forest Land Reclamation and Ecological Restoration,Cracow University, (Poland) Dr. Harald Mauser, Liaison Officer at the "European Forest Institut" (EFI); Mr Rolf Gehring, Political Secretary Safety & Health / Wood,Furniture, Forestry of the European Federation of Building and Wood workers (EFBWW) Ms Fanny-Pomme Langue, Secretary General of the European Confederation of Forest Owners" (CEPF); Mrs Isabelle Brose, Management Adviser of "European Federation of the Parquet Industry" (FEP); Mr François De Meersman, Secrétaire général/ Bois Confederation (Belgium); Mr Clive Pinnington, Director of the "European Panel Federation" (EPF) and Mr Patrizio Antonicoli, Secretary General of the European Wood Working Confederation (CEI-Bois)

Previously in 2014 the EESC elaborated a report on the "Contribution of the woodworking sector in the carbon balance". This document is available in all EU languages at the following link:

https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/contribution-woodworking-sector-carbon-balance

6.7. Forestry's issues

6.7.1 EIP-AGRI Focus Group Report on sustainable mobilisation of forest biomass

On 21 March 2018, the EOS Secretariat attended a meeting on "Sustainable mobilisation of forest biomass". On this occasion, the EIP-AGRI Focus Group *Report on sustainable mobilisation of forest biomass* was presented and stakeholders were invited to list problems (as well as opportunities) in specific regions.

Brief information on the EIP-AGRI Focus Group *Report on sustainable mobilisation of forest biomass*

The European Innovation Partnership for Agricultural productivity and Sustainability (EIP-AGRI) has been launched in 2012 to contribute to the European Union's strategy 'Europe 2020' for smart, sustainable and inclusive growth. The EIP-AGRI Focus Groups are temporary groups of selected experts focusing on a specific subject, sharing knowledge and experience. Each group explores practical innovative solutions to problems or opportunities in the field, and draws on experience derived from related useful projects.

This EIP-AGRI Focus Group on Sustainable Mobilisation of Forest Biomass (SMFB) group concentrate on innovation in mobilising different types of forest biomass for all potential markets and better interlinking supply and demand. Economic, environmental and social functions of forests have been taken into consideration.

Objectives of the EIP-AGRI Focus Group on Sustainable Mobilisation of Forest Biomass:

- Identify success and fail factors and explore the role of innovation and knowledge exchange in addressing them;
- Identify, describe the cooperation of small-scale forest owners and barriers to implementation;
- Provide examples of best practices;
- Analyse supply and demand factors, and the means to provide a link between the two (e.g. electronic marketing tools);
- Propose potential innovative actions to stimulate the knowledge and use of management practices and strategies in mobilising forest biomass;
- Identify research and innovation needs coming from practice.

The Report is structured into eight key themes and for each key theme a so-called Mini Paper (MP) has been produced:

MP1: Involvement of actors/stakeholders in regional initiatives for forest biomass mobilisation
MP2: Forest ownership types
MP3: Markets
MP4: Decision support tools
MP5: Harvesting and transportation technologies
MP6: Contribution to environmental issues
MP7: Incentives for mobilisation of forest biomass
MP8: European map of the regional forest-based sector

Main findings:

FOREST IN EUROPE. 33% of land in Europe is covered by forests that represents >215 million hectares, with a variety among countries ranging from Ireland with approximately 11% coverage to Finland with 73.1% coverage. According to the report "State of Europe's Forests 2015", Europe's forest area has expanded by 17.5 million ha over the last 25 years. On average, Europe's forest area increased by 700 000 ha (0,33%) per year. Those are net changes and resulted from afforestation, natural forest expansion and deforestation. The area of forest in Europe for wood supply in 2015 amounted to 166 million ha, which corresponds to 79% of the existing forest area.

Europe is only covered by 7% of the global forest area, but it is still producing more than 35% of value added forest-based products worldwide.

Identified **KEY IMPACT FACTORS** for sustainable mobilisation of forest biomass in Europe:

- Changing markets and demand for forest-based products;
- (rapidly) Emerging new markets on the global scale (impact of globalisation);
- Enhanced competition between traditional and novel forest-based value chains with increasing demand for raw material supply;
- Competition for land-use and thus a threat of decreasing Roundwood production and supply;
- (In)Efficient Infrastructure / logistic concepts (transportation value chains) in all regions;
- Pricing of Roundwood and forest products;
- (Demand for) new processing technologies for soft- and specially for hardwood species;
- Climate change and its impacts on the supply of forest feedstock (not the same expected impact in different European regions).

MARKET TRENDS and new demands identified in the study:

- Increasing demand for Roundwood, sawn timber products, panel and board, pulp and paper;
- Increasing demand for smaller diameter wood and wood residues;
- Improving efficiency of operations;
- Web-based trading, advanced wood procurement and best adapted harvesting technologies;
- Efficient silviculture management models for producing Roundwood and wood-fibres while safeguarding sustainability.

Market overview: the EU market of wood (sawlogs, pulpwood, fuelwood) is about 440 million m^3 annually, including the domestic round wood of about 430 million m^3 and net imports of round wood, which are around 10 million m^3 annually.

➡ In addition, the market includes forest residues ("energy wood"). The net additional volume of (imported) residues is around 13 million m^3. Thus the total market volume of wood fibres is about 450 million m^3, considering both exports and imports of wood. Of this volume, the industrial round wood covers about 320 million m^3, including net imports of about 10 million m^3.

It is expected that the future acceleration of economic growth in the EU will increase the demand of wood.

About half of the EU forest land is owned by private owners: there are approximately 2,5-2,7 million private forest land owners in the EU.

The EU targets to increase the proportion of renewanle energy to 20% and even 30% of the total energy consumption: theoretically, the demand for wood could increase by tens of millions m^3 annually. Confusion regarding demand, price and market development may reduce the willingness to bring actively wood to the markets.

FOREST-BASED SECTOR. The forest-based sector can be seen as an important driver for biomass mobilisation. First of all, the European sawmill industry is the key driver as first transformer of forest biomass within the forest-based sector followed by pulping industries

The sawmills were undergoing a centralisation and consolidation process, influenced by a developing overcapacity in the last years. In recent years as the mills are not operating at their full capacity due to the lack of financial resources in times of economic crisis, and because of the availability of low-cost existing capacities, some companies are going bankrupt. As a result, middle size companies tend to disappear.

Main findings on the forest-based sector challenges:

- an increasing demand of forest biomass with the risk of supply shortage of (industrial) roundwood in the future.

- Infrastructure/logistic problems (transport value chains) in certain regions, hampering the mobilisation of forest biomass and the competitiveness of the forest-based sector.
- Roundwood prices and product prices, which can have a relevant impact on the forest-based sector and are strongly related to market situations and demand for forest-based products. The volatility of prices and particularly decreasing prices, or at least stable or less increasing prices compared to wood raw material prices and other costs, such as labour, transports and energy, cause the risk for forestbased industries of declining or even negative profits.
- Not sufficiently developed processing technologies for (hard-)wood;
- Increasing demand for nature conservation, which may lead to competition for land-use and management and thus a decrease of potential Roundwood supply.

The Report identifies the need of market analysis of future demand and supply (long- and short term perspectives) of forest biomass including potential new and traditional value chains.

Key issues for **HARVESTING**:

- Operations on a smaller scale need to focus on efficiency;
- Larger scale operations are needed to increase efficiency and to reduce unit costs;
- Reducing time and costs spend on relocation of machinery is essential;
- Training of forest workers and machine drivers is needed to achieve greater efficiencies and capacity;
- Digitisation of chain of custody and supply chains allows for better performance.

The **total cost for harvesting of wood extraction** to roadside and further transportation to industries can be divided into: labour costs for workers; capital costs for the machinery and equipment used; service and maintenance costs for the machinery and equipment used; energy costs (fuel) and oil for the machinery used; insurance costs and other costs of this kind that is needed. For the individual parts (harvesting, extraction and transportation to industries) all those costs can be added to a total cost per hour ongoing work.

Wood harvesting is to a high degree performed by forest machine contractors, or by an internal harvesting organization within a large forest company or state forest company that more or less act like a contractor.

Mobilization of increasing volumes of wood economically presumes increasing mechanization of wood harvesting, but different soils, sites and other conditions require different solutions.

EOS CONSIDERATIONS EXPRESSED ON OCCASION OF THIS EVENT:

Wood, a renewable raw material which retains carbon through its lifecycle thus playing an important role in the decarbonization of the economy, is the only raw material used by the sawmill industry. Few industries have a higher degree of interdependency than forestry: how the various links along the forest value chain perform and interact determines the viability of the sector as a whole.

The level of wood mobilisation depends on many factors, including the underlying level of demand for solid wood products and fuels. This includes the quality and productivity of our forests, the performance of downstream industries and how effectively the sector delivers a range of social and environmental benefits.

Owners of fragmented private forests are characterised by relatively small forest properties and related small harvestable wood amounts per owner. Forest owners' involvement in the wood market solely depends on their personal objectives. In contrast to the objectives of wood buyers, which are purely economic, owners of fragmented forests mostly have multiple objectives and attitudes. There is lots of unused wood potential in European forests. Most of this is 'locked' in forests that belong to an estimated 16 million private forest owners.

Breaking down costs in a sawmill plant, we can say that on average 60% of the costs is related to the raw material, 15% labour costs and 10% is energy and 10% overheads.

Sawmills transform wooden logs into lumber by applying a variety of manufacturing operations. In an effort to survive the effects of market trend dynamics, the wood processing industrial sector has some of the same major concerns as other industrial sectors, such as high operating costs, low profit margins, and the struggle for capturing market share around the globe.

There were almost 34,000 sawmills in the EU28 in 2016 (plus around 250 in Switzerland, and 700 in Norway) – down from around 40,000 in 2010. According to Eurostat, out of 34,000 sawmills around 29,250 are classifiable as micro enterprises, around 4,250 are classifiable as small enterprises, around 630 are classifiable as medium enterprises, and around 60 are classifiable as larger enterprises.

The sawmill industry is made up of two distinct sub-sectors, which share many aspects but do have their own specificities: the softwood sector and the hardwood sector. While there are some sawmills that process both softwood and hardwood species, most are specialized in either the processing of softwood or of hardwood. Over the last few years, the softwood sector has been recovering nicely from the massive decline which occurred as a result of the global economic crisis: according to UNECE/FAO figures, sawn softwood production in Europe (without considering CIS countries such as Russia, Ukraine and Belarus, figures from UNECE/FAO) reached 105.3 million m^3 in 2017, up from 94.7 million in 2012. While European markets have not fully recovered, softwood producers were able to expand exports to lively faraway markets. Conversely, sawn hardwood production is struggling as production remains pegged at 8 million m^3 in 2017 down from 8.7 million m^3 in 2012.

In a hardwood sawmill, log quality (grade) is evaluated differently between sawmills but is generally based upon the number and location of defects that can be visually detected on the ends and faces of the logs. Each sawmill has a well-established understanding as to how these defect types and locations would subsequently affect the overall market value of the products to be sawn from their logs. The sealing diameter and length of a log are the common variables by which log size is quantified by a hardwood sawmill. Collectively, the size and quality of log determines the components for the log grade industry descriptor. Typically, hardwood sawmills are willing to pay more for what is termed high-grade logs which have a minimal amount of external defect and large clear areas between defects.

Many studies published over the last few years – by a plethora of stakeholders with diverse point of views – point to an increase of the utilization of wood in the coming decades in Europe. According to some stakeholders, rising competition to secure wood by the various needs not be a source of concern, in view of the of the fact that European forests are expanding. About 65%-70% of the annual increment in the forest surface is indeed harvested. Moreover, sustainable forest management principles are guiding the actions of forest managers across Europe, thus securing the long-term supply of wood resources.

This somewhat rosy picture shall be taken with a grain of salt for a number of reasons.

a. Aggregated numbers at European level hide challenges at local level: some areas, and the businesses active in those areas may be confronted with shortages of wood;

b. Not all increment in forest surface can be easily harvested: concerted actions aimed to improve wood mobilization shall be investigated;

c. 68% of the wood logs traded in the EU come from EU forests (data from 2016, source Eurostat). Other important supplier of logs to the EU industries – and in particular to sawmills, the first processors of the raw materials – are, in descending order, Russia, Norway, Belarus, Ukraine. Considering that there are presently restrictions on logs exports both in Belarus and in Ukraine (which in 2016 accounted for 10% of all logs trade in the EU), one can easily conclude that the high demand on EU forests will further increase;

d. Connected to point c, not only is the supply of raw material under pressure because of the restriction in supplier countries to the East of the EU, but there are also challenges due to the fact that an increasing amount of logs is being exported to non-EU countries, such as China. **Exports of logs from the EU to China has soared by 181% in the last 10 years** (2016 vs 2007, source Eurostat). China has an internal ban on logging natural forests, so it is likely that the Chinese appetite for European resources will further increase.

The above points show that all relevant stakeholders should focus on actions aimed to increase wood mobilization. We are blessed to work with a resource that is in very high demand and will play an increasingly important role in the European economy. Many sectors need wood and only by making sure that the supply of wood in Europe will expand, this precious raw material can continue to play its fundamental role in the European economy.

6.7.2 European Report "Biomass production, supply, uses and flows in the European Union".

In March 2018 the EU Commission has published a Report titled "Biomass production, supply, uses and flows in the European Union".

The report delivers an assessment of EU biomass production, uses, flows and related environmental impacts for the sectors agriculture, forestry, fisheries and aquaculture, and algae. Calculations are assessed using the Sankey biomass diagram. The Sankey diagram of woody biomass flows highlights the crucial role of the sawmill industry, as the largest industrial user of woody biomass as well as the main supplier of by-and co-products used in wood-based panel and pulp industries as well as for energy generation.

The European sawmill Industry within EU is at the same time the largest industrial user of woody biomass and the main source of secondary wood fibres, used by wood-based panel and pulp industries as well as for energy. Further, as sawlogs represent the economically most valuable part of trees, **the sawmill industry is key in mobilising woody biomass from forest owners**. The cascade uses of woody biomass within the wood-based economy is evident, as are synergies and competition. The energy sector is by far the largest user of EU internal wood processing residues and by-products.

The Report states that **intensifying the cascade use of woody-biomass**—making even more efficient use of industrial by- and co-products—and increasing the use of waste-wood **would increase the supply base and reduce the pressure on EU forests**.

Energy accounts for almost half (48%) of total reported uses of woody biomass on EU-28 level but it is considered that energy uses are underreported and the energy share of woody biomass uses should reasonably be even higher.

Extract: EU-28 Wood Resource Balances in 2013 (thousands of m³ of solid wood equivalents - last row in Mt dry weight) – EOS Countries including UK - Data non available for Switzerland and Norway:

1000 m³ SWE	Sources			Uses		Balance
Member State	Primary	Secondary	Post-consumer wood	Material	Energy	(Uses - Sources)
Austria	29,946	13,912	1,163	30,069	23,656	8,704
Belgium	10,331	5,449	1,749	9,146	12,143	3,760
Croatia	4,805	327	243	3,105	2,113	-157
Denmark	4,142	5,458	566	1,601	10,685	2,120
Finland	71,452	33,813	560	65,302	38,662	-1,861
France	59,481	11,841	5,278	32,016	46,627	2,043
Germany	71,806	24,559	15,172	69,045	65,911	23,418
Latvia	10,455	1,653	0	10,783	NA	-1,325
Romania	17,863	5,891	1,868	19,553	35,295	29,226
Sweden	87,334	43,222	1,839	83,835	50,514	1,955
United Kingdom	12,787	11,916	2,228	13,339	13,364	-228
EU-28	**525,222**	**207,571**	**37,556**	**453,589**	**415,203**	**98,443**
EU-28 (Mt)	**241.6**	**95.5**	**17.3**	**208.6**	**191.0**	**45.2**

MAIN FINDINGS OF THE REPORT.

The Sankey diagram finds that, for dry matter content, agriculture accounts for approximately 65% of the biomass supply sector in the EU-28, forestry accounts for 34%, and fisheries represent less than 1%. Agricultural supply is split into crops (62%), collected crop residues (23%) and grazed biomass (15%). Almost 70% of forestry biomass comes from primary woody biomass, and the biggest source of biomass in the fisheries sector is imported fish and seafood, followed closely by captured fish.

Over 60% of biomass is used for feed and food, with the remainder split fairly evenly into bioenergy (biofuels) and biomaterials (mainly solid wood products). Quantitative estimates are derived from available data and current knowledge, yet highlighting the uncertainties and the remaining gaps. Data gaps and inconsistencies result from, e.g., informal trade (e.g., private uses of fuelwood) as well as underestimated or unreported fellings, wood residues and co-product flows, waste recovery streams (e.g., postconsumer recovered wood), and heat and power production uses of wood and incorrectly reported trade data (e.g., including re-exports).

From 2000 to 2015, forest area in EU-28 has been expanding by roughly 413 000 ha per year (6.2 Mha in total), corresponding to an average rate of expansion of 0.26% per year. However, from 2010 to 2015 the average expansion rate slowed down to 339 000 ha per year, thus lower than the 15-year average.

In the forest-based sector in 2013, EU-28 reported biomass sources were in total about 354 Mt dry weight, summing primary (242 Mt), secondary (95 Mt) and post-consumer (17 Mt) sources. Total known uses of woody biomass summed to around 399 Mt dry weight of Solid Wood Equivalents (SWE), consequently, there is a gap of 45 Mt between the reported sources and uses of wood (the latter being higher). Regarding the share of energy and material uses, 52% of wood primary and secondary sources were used for materials while 48% for energy.

At EU-28 level, removals have consistently been lower than increment because significantly underestimated (up to 20% as an EU level conservative estimate, although with large differences among countries). Consequently, the actual EU harvesting ratio is likely to be at least 12% higher.

Targets for renewable energy set by the EU have resulted in a surge in the consumption of woody biomass. Reported fuelwood removals—underestimated—increased from around 70 Mm^3 to about 99 Mm^3 between years 2000 and 2015, while consumption increased from about 69 Mm^3 to around 99 Mm^3. Wood pellets has experienced even stronger relative consumption growth, from 14.3 Mt in 2012 (data are only available from 2012) to 20.5 Mt by 2015. During the same period, EU production increased from 11 to 14.2 Mt. Hence, imports have been growing rapidly. Imported solid biofuels, mainly composed of wood pellets, accounted for around 7% of all primary energy production from solid biofuels in the EU-28 in 2013 (Eurostat).

Most bio-based commodities release less GHG than fossil products along their supply chain; but the magnitude of GHG emissions vary greatly with logistics, type of feedstocks, land and ecosystem management, resource efficiency, and technology.

The climate change mitigation potential of bio-based commodities can only be revealed if biogenic-C, counterfactual uses of biomass and land, and indirect effects are considered.

Too often, the focus of environmental impact assessment of bio-based systems has been solely on climate change and carbon emissions. However, bio-based systems have the potential to cause trade-offs between climate change mitigation and negative impacts on biodiversity or ecosystem services.

EU Study on "Sustainable and optimal use of biomass for energy in the EU beyond 2020"

Last June 2017, the European Commission published the Study entitled "Sustainable and optimal use of biomass for energy in the EU beyond 2020".

This Study aims at defining the maximum supply potential of EU28 sustainable biomass, and what might be the evolution of demand by 2030, both for energy and industrial needs. It includes considerations on the main assumptions of the extra-EU supply scenarios of solid biomass and supply by 2030.

Copy of the study is available at the following link:
https://ec.europa.eu/energy/sites/ener/files/documents/biosustain_report_final.pdf

The Study in a nutshell:

This Study has been commissioned by the Directorate General for Energy (DG ENER) of the EC to the Consortium led by the research centres PwC, VITO, TU Wien, Utrecht University, INFRO and Rütter Soceco in order to support the Commission's analysis on "**Sustainable and optimal use of biomass for energy in the EU beyond 2020"**. The study includes the following issues:

* An assessment of the biomass supply potentials, in relation to the anticipated demand trends in bioenergy and material use post-2020; this task was based on a desk review of available literature, complemented by an expert workshop.

* An analysis of potential gaps in the existing EU and national policy and regulatory framework addressing the sustainability of biomass systems for bioenergy; this task was based on a desk review and an analysis of the replies to the public consultation held by the EC at the beginning of 2016 on the EU bioenergy sustainability policy.

* An identification of possible policy options and a consequent assessment of the socioeconomic and environmental impacts - with reference to a policy baseline. This task was carried out using the Green-X model and the MULTIREG model. The modelling approach assumes the achievement of the EU 2030 climate and energy framework (40% GHG savings, at least 27% RES share and at least 27% energy efficiency).

The current estimated potential of biomass supply is consistently above today's primary production of biomass for energy in the EU28. Also in the longer term, potentials – both restricted, reference and resource potential scenarios - are clearly higher than the amounts that will be required for bioenergy demand. The domestic supply potential in the EU28 in 2030 ranges between 338 Mtoe in the restricted supply scenario to 391 Mtoe in the resource supply scenario.

In terms of forestry biomass, the consumption in 2030 is estimated at 76-110 Mtoe, which is very close to the potential (79 Mtoe in the restricted potential to 146 Mtoe in the resource potential), so forestry biomass potential is expected to be largely used, particularly in case high utilisation restrictions are applied for forestry biomass.

The total growing stock of forest biomass in the EU is estimated by around 21,000 Mm³ of solid wood equivalent (swe) (or 4,400 Mtoe), with a theoretical annual increment of total biomass of 1,277 Mm³ swe overbark10 (268 Mtoe) in the EU. However, various technical, environmental and social constraints and conditions reduce the total achievable supply potential for all uses (energy and materials) to about 710 Mm³ swe (149 Mtoe). **Total industrial non-energy demand for primary and secondary forest biomass i.e. residues and recycled material, is projected to increase from 437 Mm³ in 2010 to 514 Mm³ in 2030.** The total available primary and secondary forest biomass is calculated at 1,020 Mm³ in 2010 to 1,074 Mm³ (swe) in 2030 in the reference scenario. The 20 year primary and secondary growth rates are 583 (e.g. 1,020-437) and 559 Mm³ (swe).

At least 350 Mm³ are already used for bioenergy in 2010 (EUwood report, Mantau et al., 2010). The additional potential bioenergy demand is roughly 200 Mm³ in the period 2020 - 2030, mostly in the form of forest residues and landscape care wood. This is a potential supply under the named constraints and not necessarily available to markets.

The largest share of forest biomass supply - stemwood, primary forest residues, secondary forest residues - in the EU28 is in Germany (15% by 2030) followed by France, Sweden, Finland and Poland. Together, these five Member States's will make up ~60% of forest biomass supply capacity in the EU28 by 2030.

Concerning trade in biomass intra-EU trade, Poland is projected to export 505 Ktoe agropellets and 1355 Ktoe wood

chips from stemwood and forest residues to other MSs by 2030. Germany mainly imports wood chips and stemwood from others Member States's (mainly Poland and Sweden).

Looking at trends in solid biomass pellets Extra-EU imports, Canada is currently the third largest producer of wood pellets and second largest supplier of wood pellets to the EU. Supply growth from Western Canada in the export scenarios is based on Pöyry. Under Pöyry (Lechner & Carlsson, 2014), wood pellet production will increase moderately from 1.9 Mt pa today to 3.8 Mt pa by 2025. The netback suffers from the large shipping distance between Western Canada and the EU.

Moreover, the Study provides an overview the risks related to an increased biomass demand such as:

- Supply chain related greenhouse gas emissions;
- Greenhouse gas emissions related to changes in biogenic carbon stocks;
- Greenhouse gas emissions related to indirect land use change (ILUC);
- Impacts on biodiversity, soil and water;
- Impact on air quality;
- Competition with non-energy end-use markets (Some Member States list types of biomass that under certain conditions are (not) entitled to receive support for energy production, e.g. when there are recycling options. Nevertheless, this approach is not consistently applied between Member States, which can distort the single market. Mind that bioenergy and biobased products are also complementary, as in many cases energy is a co-product of wood based products through the use of residues.)
- Distortion of the single market (the lack of EUwide harmonized sustainability criteria for solid biomass - in contrast to biofuels and bioliquids - has led to different Member States approaches, which impacts trade options within the EU.)

The Study identifies as five specific operational goals related to bioenergy sustainability: (i) ensure that bioenergy use in the EU contributes to climate change mitigation; (ii) avoid direct and indirect land use change; (iii) minimize biodiversity impacts; (iv) ensure efficient biomass conversion into energy, and (v) avoid any barriers to trade of biomass, distorting the EU internal market.

On the basis of these objectives, the Study presents 5 policy options:

Option 1 – **baseline: refers to the current situation**, e.g. sustainability criteria for biofuels and bioliquids, no additional EU action on biomass for heat and power. There are five alternative options to the baseline, as described below.

Option 2 – **EU biomass sustainability criteria for heat and power**: EU sustainability criteria for biofuels are continued (as in Option 1) and they are extended to solid biomass and biogas for heat and power production. More specifically, the land criteria and cross compliance rules for agricultural biomass are identical to the criteria for biofuels and bioliquids. For GHG savings, a specific threshold for heat and power applications is set at 70%. These requirements apply to large scale plants, i.e. above a certain scale (base case: 4-5 MW thermal biomass input).

Option 3a – **SFM certification requirement**: this option is similar to Option 2 in terms of the land criteria for agricultural biomass and of the GHG saving criteria. For forestry biomass, the land criteria are replaced by a new criterion on Sustainable Forest Management (SFM). This means that all forest biomass used for energy generation should demonstrate compliance through SFM certification.

Option 3b – **risk-based approach for forest biomass**: Building on Option 2, a risk based approach is applied to minimize the risk of unstainable woodfuel harvesting. Evidence of compliance with such requirement would be

gathered first at national or subnational level in the country of forest biomass production. Where this evidence is not available, operators would be required to provide evidence at the forest holding level.

Option 4 – **energy efficiency requirement**: This option builds on Option 2, in terms of GHG savings and land criteria; in addition, it introduces a minimum efficiency standard (base case of 65%) for the conversion of biomass in new large-scale electricity and heat installations.

Option 5 – **stemwood cap**: Also building on Option 2, in terms of GHG savings and land use criteria; this option introduces a cap on the use of stemwood for bioenergy at the MS level. This option would not cover firewood currently used for residential heating, since such use is not covered by national support schemes and therefore cannot be easily verified. (*The non-energy forest product industry (like the pulp and wood panel industries) might be expected to support this option, as it prevents using roundwood for energy purposes and keeps this biomass resource available for their markets*).

Cascading use of wood:

At the beginning of 2016, the EU Commission organised a public consultation in view of the development of a sustainable bioenergy policy for the period after 2020. This consultation complemented the information collected during the workshop held on 7 December 2015. From the debate, as reported by the Study it was underlined:

- In terms of sustainability risks and possible mitigation actions, a panel debate brought various interesting points forward that were used for the further identification of risks, policy gaps and potential policy options (see chapter 2). Points brought forward concerned the multifunctionality of forests, forest management systems, comprehensive carbon accounting systems, aim for high efficiency applications, 'clever, but not rigid' way of cascading recognizing the long-term storage of carbon in materials, promote the investment climate for biochemicals and other biomaterials, common sustainability criteria at EU level, build on existing national regulations, regional assessments with risk-based approach, put efforts in mobilisation of biomass, a framework of carbon pricing, among other.
- In many of the additional comments from NGOs and academic institutions it was highlighted that the cascading principle should be guiding in the use of biomass for various energy and non-energy end applications. Under information received from EC representatives, NGOs have indicated to the EC that they are in favour of restricting the use of stemwood for bioenergy.

6.7.3 Public consultation on the EUTR Product Scope

A public consultation (available in 23 EU languages) on the EUTR Product Scope was launched on 29 January 2018 until 24 April 2018.

Any interested party, including operators (as defined under the EUTR), Traders (as defined under the EUTR), other businesses potentially concerned with a changed product scope, affected industry and/or trade associations, Member States' EUTR Competent Authorities, Monitoring Organisations under the EUTR, Civil society organisations, non-EU timber-producing countries, general public have been invited to take part in the consultation.

Objective of the consultation

Following the evaluation of the effectiveness and functioning of the EUTR during its first two years of application, it was noted that the EUTR covers a significant number of timber products, but not all are included in its scope. The evaluation concluded that the European Commission may consider amending the product scope, subject to an impact assessment of options. The European Commission had therefore undertaken an impact assessment to analyse possible changes to the EUTR product scope. As part of this impact assessment process and in line with the European Commission's Better Regulation Guidelines, an extensive consultation of stakeholders was carried out. The main aim of the public consultation is to gather views and evidence on possible changes to the EUTR product scope.

The questionnaire is built around three main policy options (no change in the product scope, change by adding some products that contain timber, change by including all products that contain timber). Regardless of which option is selected, respondents were invited to give your views on potential environmental, economic and social impacts of all three options.

The EOS Secretariat submitted its response to the consultation, asking that the following products categories are included in the EUTR.

- **4402:** Wood charcoal (including shell or nut charcoal), whether or not agglomerated;
- **4404:** Hoopwood; split poles; piles, pickets and stakes of wood, pointed but not sawn lengthwise; wooden sticks, roughly trimmed but not turned, bent or otherwise worked, suitable for the manufacture of walking sticks, umbrellas, tool handles or the like; chipwood;
- **4419:** Tableware and kitchenware, of wood.

The rationale behind this is that the EOS believes that all wood entering Europe should be certified as a matter of principle.

MARKET EVIDENCE (source Eurostat data):

- **4402**: the EU28 in 2016 imported 662,306 tonnes of wood charcoal, of which 22% from Nigeria, 21% from Ukraine, 10% from Cuba (main importers, in descending order, Poland, Belgium, Germany)
- **4404**: the EU28 in 2016 imported 257,758 tonnes of products which fall under this code, of which 88% from Belarus (main importer Latvia – more than 90% of 4404 products imported)
- **4419**: the EU28 in 2016 imported 66,629 tonnes of tableware and kitchenware of wood, of which 80% from China (main importers, in descending order, Germany, UK, the Netherlands)

Imports of products (unit of measure: tons) which fall under the 4402, 4404, 4419 codes:

PRODUCT	4402 CHARCOAL			
PARTNER/PERIOD	Jan.-Dec. 2015	Jan.-Dec. 2016	% CHANGE 2016 VS 2015	MARKET SHARE 2016
TOTAL	622076	662306	6,5	
NIGERIA	144159	143475	-0,5	21,7%
UKRAINE	110298	142522	29,2	21,5%
CUBA	63735	67542	6,0	10,2%
PARAGUAY	58428	48617	-16,8	7,3%
NAMIBIA	31047	36707	18,2	5,5%
INDONESIA	33601	36656	9,1	5,5%
ARGENTINA	28718	25755	-10,3	3,9%
UNITED STATES	819	24835	2932,3	3,7%
RUSSIAN FEDERATION (RUSSIA)	37719	21458	-43,1	3,2%
BOSNIA AND HERZEGOVINA	19987	20036	0,2	3,0%

PRODUCT	4404 HOOPWOOD, SPLIT POLES, WOODEN STICKS			
PARTNER/PERIOD	Jan.-Dec. 2015	Jan.-Dec. 2016	% CHANGE 2016 VS 2015	MARKET SHARE 2016
TOTAL	83319	257758	209,4	
BELARUS (BELORUSSIA)	48585	226198	365,6	87,8%
BRAZIL	8651	8156	-5,7	3,2%
RUSSIAN FEDERATION (RUSS	3083	6520	111,5	2,5%
UKRAINE	1649	3018	83,0	1,2%
CANADA	3351	3000	-10,5	1,2%
NORWAY (incl.SJ excl.1995,19	7610	2724	-64,2	1,1%
CZECH REPUBLIC (CS->1992)	3489	2182	-37,4	0,8%
MOLDOVA, REPUBLIC OF	1332	1897	42,4	0,7%
CHINA (PEOPLE'S REPUBLIC O	1947	1012	-48,0	0,4%

PRODUCT	4419 TABLEWARE KITCHENWARE			
PARTNER/PERIOD	Jan.-Dec. 2015	Jan.-Dec. 2016	% CHANGE 2016 VS 2015	MARKET SHARE 2016
TOTAL	64074	66629	4,0	
CHINA (PEOPLE'S REPUBLIC OF)	51666	53285	3,1	80,0%
THAILAND	3086	2996	-2,9	4,5%
VIETNAM (excl. NORTH -> 1976)	2799	2972	6,2	4,5%
INDIA	1450	1885	30,1	2,8%
INDONESIA	684	906	32,5	1,4%
SERBIA (EU data from 01/06/05 ex CS)	977	816	-16,5	1,2%
TUNISIA	631	782	23,9	1,2%
HONG KONG	391	495	26,5	0,7%
CZECH REPUBLIC (CS->1992)	551	478	-13,2	0,7%

6.7.4 EOS Observer in Forest Europe

Since November 2017, the European Organization of the Sawmill Industry obtained the status of observer in Forest Europe.

FOREST EUROPE (*The brand name of the Ministerial Conference on the Protection of Forests in Europe*) is the pan-European voluntary high-level political process for dialogue and cooperation on forest policies in Europe. FOREST EUROPE develops common strategies for its 47 signatories (46 European countries and the European Union) on how to protect and sustainably manage their forests. Since 1990, the collaboration of the ministers responsible for forests in Europe has had a great economic, environmental and social impact on the national and international level. FOREST EUROPE has led to achievements such as the guidelines, criteria and indicators for sustainable forest management.

With the aim of agreeing on how to manage forests in Europe, FOREST EUROPE process periodically hosts ministerial level conferences where ministerial commitments and resolutions are adopted.

The political decisions and resolutions made under FOREST EUROPE are voluntary, and by endorsing these commitments countries show their willingness and interest to protect and sustainably manage their forests. Commitments endorsed by the ministers serve as a framework for implementing sustainable forest management in the European countries, adapted to their national circumstances and done in a coherent way with the rest of the region, and strengthen international cooperation at the same time. FOREST EUROPE is involved with other global and regional processes and initiatives dealing with issues of highest political and social relevance related to forests.

Slovakia currently holds FOREST EUROPE co-chairmanship together with Spain. At the 7thFOREST EUROPE Ministerial Conference the Slovak Republic took over the chairmanship (held by Spain since the Oslo Ministerial Conference until the Madrid Ministerial Conference). At the beginning of 2016 the Liaison Unit Bratislava started to operate, taking over the work from the Liaison Unit Madrid.

6.8 Bioeconomy

Bio-based products are made from renewable raw materials like straw, wood, algae, organic waste, etc. The increased use of bio-based products with enhanced sustainability profiles and new functionalities do not only help create jobs and stimulate growth. It also reduces the dependence on fossil-based carbon and CO_2 emissions.

On 15 November 2017, the Commission expert group on bio-based products called for alignment of bioeconomy strategy with the EU policy framework. The Expert Group on Bio-Based Products (BBP EG) is composed of representatives of the EU countries and state agencies, public procurement experts, standardisation and certification organisations, industry, NGOs and academia, the Expert Group on Bio-based Products has, throughout its mandate, inter alia, provided recommendations on communications and awareness, public procurement and sustainability of bio-based products, which are all relevant to developing new markets through these ongoing processes.

In particular, the Expert Group on Bio-Based Products elaborate a written report where it was suggested to:

- coordinate bioeconomy within overall EU policy framework and full revision of the bioeconomy strategy;
- Further improve access to financing for investments in biorefinery projects;

- Enable sustainability assessment of (bio-based) products.
- Apply standards and labels for better evaluation by purchasers.

Furthermore, the exper group stated "*a defining characteristic of the bioeconomy is that its resources are harvested from ecosystems that have multiple functions which are essential for humans and nature. The need for sustainable management of the cradles of these resources, be they forests, agricultural lands or oceans, is critical to ensuring that the term 'bio-based' is associated with a product's sustainability footprint. Therefore, sustainable sourcing of the raw materials used in the bioeconomy should be a precondition for any promotional measures. Increased productivity in current agriculture and forestry is key to tackling the increased scarcity of land per capita and to respond to the growing need for biomass, whether this is for food, feed, material, energy or carbon sequestration*". The expert group highlighted that "it is also relevant to further consider the climate benefit of bio-based products in the EU Green House Gas (GHG) accounting framework of Land Use, Land Use- Change and Forestry (LULUCF), as these products help store carbon during their life span and during recycling."

The bioeconomy is already worth over €2.2 trillion while providing over 18 million jobs in Europe. It is a key contributor to Europe's jobs and growth agenda. In addition, it has the potential to add value, increase competitiveness in many of its sectors, and contribute to both rural and urban economies. Today the Commission's expert group is presenting the outcomes of its 4 years mandate at the `Bioeconomy policy day' in Brussels.

6.8.1 EU Parliament Event on "Building an effective Bioeconomy Strategy"

On Thursday 28 September 2017, the EOS Secretariat took part at the event organised by the Member of the EU Parliament, Mrs Miapetra Kumpula-Natri, titled "Building an effective Bioeconomy Strategy". The breakfast meeting event gathered policy-makers and stakeholders in the European Parliament to assess the achievements of the 2012 European Bioeconomy Strategy and highlight the next steps moving forward.

Brief report of the meeting:

Miapetra Kumpula-Natri MEP welcomed participants by highlighting the importance of innovation and emphasising that there are many new innovations underway by young scholars. It was said that it is rumoured that a staff working document is circulating the Commission on the existing Bioeconomy Strategy and that the question remains whether it should be updated or not. It was said that in view of the current policy frameworks such as the Paris Agreement and Circular Economy Package the Strategy should be updated in order for Europe to play a significant role in implementing these objectives. Further, it was highlighted that energy, industry and agriculture need coherence and more symbiosis.

Jyrki Suominen, Deputy Head of Strategy Unit, Bioeconomy Directorate, DG RTD, European Commission underlined that the review process is not yet finished but provided an insight to the initial process of the Strategy and the next steps. It was outlined that the Strategy was jointly developed among five Commissioners and was set out to pave the way to a more innovative resource efficient and competitive society that reconciles food security with sustainable use of renewable resources while ensuring environmental protection. The Strategy had five main objectives: ensure food security, manage natural resources sustainably, reduce dependence on non-renewable resources, mitigate and adapt to climate change, create jobs and maintain EU competitiveness. An Action Plan was also developed around the three main areas: invest in research, innovation, and skills, reinforce policy interaction and stakeholder engagement, and enhance markets and competitiveness. One main achievement has been the establishment of the Bio-based Industries Joint Undertaking. Another important result is the attention

gained from national and regional policy-makers with almost all a large number of Member States, except for most Eastern European countries, having a dedicated national bioeconomy strategy or bioeconomy related policies. It was noted that the national strategies also go beyond research and innovation and have been created jointly covering various policy areas. Many regions have also incorporated bioeconomy aspects in their strategies. It was stressed that knowledge and understanding of the bioeconomy is central for its further development, which is why the Strategy supported setting up the Bioeconomy Knowledge Centre supported by the Joint Research Centre. The progress thus far was highlighted mentioning that actions to support markets and competitiveness is somewhat mixed. Further, progress on the regulative framework and development of new markets has been slow in some areas. The Strategy has also been examined to see if it is still fit for purpose. The review has shown that major objectives and goals of 2012 are as relevant today as they were back then. Strong investments in research and innovation are providing the technologies needed but more synergies and governance with other instruments are needed to fully exploit the potential. It is essential to make agriculture, forests and aquatic systems more circular and exploit their regional biomass potentials. More needs to be done in supporting private investments and dedicated financial instruments. The next steps will be to present the findings of the review at the Bioeconomy Policy Day on November 16. The Commission will by then know what actions will be taken on the Strategy. It was pointed out that the Industrial Policy Strategy Communication, which was recently published states that a stronger bioeconomy can help the EU progress towards a circular and low carbon economy. The Bioeconomy Strategy was also included in the Annex of the actions for 2018, but for the definite decisions of what this means will only be announced in a few weeks.

Pierre Bascou, Director for Sustainability and income support, DG AGRI, European Commission showcased that bioeconomy plays an important role for the development of the agriculture and forestry sectors offering significant opportunities to increase and diversify income sources and create jobs in rural areas. These two sectors have a role to play in exploiting the full potential of biomass ensuring the sustainable availability of organic materials for food and feed as well as biobased products. It was said that the Common Agricultural Policy (CAP) supports the bioeconomy in three ways. Firstly, it supports the competitiveness of the farm sector by granting decoupled income support to farmers and agricultural producers. This ensures the sustainable production of agricultural products providing feedstocks for the bio-based industry. Secondly, under the rural development programmes it promotes innovation in the bioeconomy as well as supply and use of renewable sources of energy, waste, residues, and other non food raw material for the purpose of bioeconomy. It was pointed out that different policy instruments can be used in this aspect also depending on the need of the territory. In this regard there are various opportunities for investments supporting the bioeconomy. Another specific instrument, which is used to support operational groups is the European Innovation Partnerships, which brings together different stakeholders to test the possibility to adapt to new technologies in real conditions. This measure is part of Horizon 2020 and contributes to aspects focused on bioeconomy in relation to farming and forestry and supporting rural areas. It was informed that the next call for proposals should focus on a more circular bioeconomy, small-scale bioeconomy refineries, and facilitate the recovery and reuse of nutrients from waste streams.

It was said that further efforts are needed in order to support the development of the bioeconomy: to continue to ensure sustainable production in agricultural and forestry sectors (i.e. to optimise the production and use of exploit biomass), to put more efforts to decarbonise the economy and finally to address the broad policy challenges (environment, energy, climate, circular economy etc.) where farming and forestry have a clear role to play. Three key challenges were outlined in reaching the abovementioned objectives. Firstly, the need to ensure coherence of these policy framework and initiatives was raised to achieve the paradigm shift towards using our natural resources in the most efficient and sustainable way. For this we need to take better account of the potential of new technologies, robotics, artificial intelligence. Secondly, it was stressed the need to better involve farmers and forest owners as well as rural areas, which was also one of the results from the recent consultation of the CAP. Thirdly, with regards to future hurdles more knowledge and coherence can help create synergies.

Philippe Mengal, Executive Director of the Bio-based Industries Joint Undertaking (BBI JU) emphasised in his presentation that a fossil based economy is just a brief moment in our global history, stressing that the bioeconomy

is the future. Bio-based industries are an emerging sector of the current economy representing already 3.3 million jobs with a € 674 billion turnover. It was noted however, that challenges and risks still arise, within the value chains at each stage, from the initial biomass, to the biorefineries, to the final product. These challenges arise due to a number of factors including the fragmentation of the chain, high investment costs and regulation constraints. The public-private partnership was created between the European Commission and the Bio-based Industry Consortium (BIC) with the intention of mitigating these risks, de-risking investment for private research and innovation and structuring the sector in order to allow it to reach critical mass in a focused and coherent way. The objective of BBI JU is to develop sustainable and competitive bio-based industries in Europe, based on advanced biorefineries that source their biomass locally and sustainably. This is to be achieved by demonstrating new technologies, developing new business models, and setting up flagship biorefinery plants. By 2030, the expected impact of these initiatives involves reducing dependency on oil by replacing at least 30% of existing petroleum-based products, reducing by 50% greenhouse gas emissions, diversify and grow farmer's revenues, develop the potential of agri-food waste and forestry residues, create new jobs and promote an overall shift to a bio-based economy. It was informed that the BBI JU supports various projects underway in Europe also mentioning that they tend to focus on various criteria. For example each project must take into account an LCAnalysis and other areas of focus include waste valorisation, reconversion of marginal lands, protein recovery, and new feedstock supply chains, to name a few. Today BBI JU is halfway through the initiative with already four Calls for proposals in the past 3 years and a portfolio of 65 projects. BBI JU has seen an increase in mobilisation both in numbers of projects as well as coverage of countries, being well spread from the north to south and from east to west. An important achievement pointed out is the high participation of SMEs who play a critical role in technology development. In terms of outcome it was said that the BBI JU are already over-performing in reaching the objectives providing a positive outlook for the future. Lessons learned include the need to increase mobilisation in BBI calls, optimal value chains coverage, increasing interest from regions, growing BBI JU awareness, new types of collaboration, and Europe is back on the map as an attractive area for investments. It was concluded by mentioning some priorities for the future such as including farmer organisations participation. It was also said that municipal bio-waste offers huge potential and the BBI JU will widen the participation strategy, put more emphasis on aquatic biomass, increase brand owner participation, better communication between EU citizens, and engage more with young scientists. Further, the BBI JU will hold its first Stakeholder Forum on 7th December in Brussels to discuss these messages and steps for the future.

Joanna Dupont-Inglis and Johan Elvnert, European Bioeconomy Alliance (EBA) presented the stakeholders's view. Mr Elvnert introduced the EBA; a group of 12 organisations representing a wide range of stakeholders in the bioeconomy. The primary goals of this organisation revolve around raising awareness of the bioeconomy and making the bioeconomy mainstream by engaging stakeholders to realise the full potential of the European bioeconomy. In this regard he listed five policy asks, the first being to integrate bioeconomy into key EU policies to increase the availability of biomass. Additionally he relayed the need to increase the financing for the bioeconomy, secure the Bio-Based industries Joint Undertaking by 2020, incentivise the use of bio-based products in strategic sectors, and increase the demand for biobased products by promoting their value.

Ms. Dupont-Inglis, Chair of the Bioeconomy Stakeholders Panel explained in her presentation that this panel is an important part of the Bioeconomy Strategy. The Bioeconomy Panel incorporates 29 members from diverse organisations including NGO's, trade unions, regions and regional organisations, universities, and industry representatives with the goals of building on the Bioeconomy Stakeholder Manifesto and identify concrete actions to enhance the bioeconomy with active participation by panel members. The Panel has based its work on the building blocks from the 4th Bioeconomy Stakeholders Conference, which was held in April 2016 in Utrecht. The Panel has taken part in stakeholder meetings, consultations, interviews with active stakeholders, and group discussions in order to collect and draft the final input. The Panel aims to finalise the Manifesto by the Bioeconomy Week organised by the Commission 16-17 November 2017. The Panel is also working on Action Plans on education and training, circular economy, regions, and awareness and communication. It was further outlined that the guiding principles of the Manifesto, emphasising its efforts to address societal and environmental challenges and to facilitate innovation and business opportunities. She then relayed actions being undertaken in conjunction with

the Manifesto relating to promoting education and training, embracing the circular economy, strengthening the regional bioeconomy, and raising public awareness, to name a few. She concluded by identifying a number of Manifesto recommendations to EU policy makers and Member States, which include supporting market creation, innovation and a common agricultural policy, establishing a level playing field, investing in the future of the bioeconomy, and strengthening the coordination within the Commission's services.

The discussion with the audience reiterated the potential of the bioeconomy also emphasising that this potential adheres to all of Europe. It was pointed out that Europe is a diversified landscape with national strategies varying depending on each country and even region. Spain was highlighted as an example as it is not homogenous in its potential. It was said that each country and region must find the potential within their area and resources as there are many types of bioeconomy to pursue. A way for regions to get more involved in the bioeconomy is to use smart specialisation strategies or structural funds to push forward its development.

Lambert van Nistelrooij MEP closed the meeting by emphasising the importance of bringing recognition to European projects in the bioeconomy area. The project 'Let the stars shine' was presented and advocated for engagement of EU citizens and more communication and awareness with regards to European development of the bioeconomy. Examples of successful projects from bio-based industries were presented including 'Lina', the first biocomposite car, biobased art, and a project engaging youth populations in developing bioplastics from potatoes. The innovation potential of the bioeconomy was reiterated and the meeting was concluded by emphasising the need to communicate accomplishments to the European community.

6.9 The European Trade policy

6.9.1 The hardwood logs exports

A delegation of Members of the EU Parliament has acknowledged the problems that the hardwood sawmill industries are facing and co-signed a joint letter to Jean-Claude Juncker, **President of the European Commission**, Jyrki Katainen **Vice-President for Jobs, Growth, Investment and Competitiveness** and to Cecilia Malmström, **Commissioner for Trade** in order to stress the difficulties of the European hardwood sawmill sector.

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Brussels, 23 June 2017

Jean-Claude Juncker
President of the European Commission

Jyrki Katainen
Vice-President for Jobs, Growth, Investment and Competitiveness

Cecilia Malmström
Commissioner for Trade

Subject: Difficulties of the European hardwood sawmill sector

Dear President Juncker,
Dear Commissioner Katainen,
Dear Commissioner Malmström,

In the light of the difficulties that the European hardwood sawmill sector is facing, a coalition of Members of the European Parliament calls on the European Commission to investigate the impact caused by the subsidies given by the Chinese government to their wood-processing industries. A roundtable between the European Commission and the European hardwood sawmill producers should be established as soon as possible in order to investigate possible and appropriate measures. An action plan to tackle the challenges this manufacturing sector is facing should be elaborated in the framework of the future European Industrial Strategy and in future questions of international trade. In the study "An assessment of the cumulative cost impact of specified EU legislation and policies on the EU forest-based industries" commissioned by the EU Commission from the research centre Technopolis and published in November 2016, it is clearly mentioned that "in order to reduce the dependency on imported raw materials, the Chinese government provides subsidies and loans to support the industry's expansion". Such subsidies have been provided by both central and local governments and aim to "develop fast growing, high-yield plantations; reduce taxes and fees on plantations to stimulate investment; reduce tariffs on imports of processing machinery; promote exports of wood and paper products through value-added tax (VAT) rebates; provide loans and loaninterest subsidies for technology renovation; promote foreign investment in state-owned enterprises (SOEs) and protect debt-ridden SOEs and small local companies with excess-production capacity through local governments' soft loans, subsidies". Moreover, China has announced that it will reduce the import VAT for logs from 13% to 11% starting from 1st July. This policy aims at reducing import costs for logs and encouraging more import volumes – especially as less timber is harvested in China. As a consequence of a growing demand for timber and tighter domestic forest protection laws, China has become the world's largest importer and processor of logs. China imported 48.7 million m^3 of logs in 2016, an increase of 9% since 2015. Of the total log imports, softwood log imports were 33.7 million m^3 (+13% as compared to 2015), while the hardwoods were 15.1 million m^3 (+2%). Imported temperate hardwood logs (beech and oak) mainly came from Europe, accounting for 56% of the overall temperate hardwood imports. Lax environmental regulations, shortcomings in the respect of basic labour and social rights, subsidies and market distortions determine comparatively low labour and production costs in China. Taking into consideration the past 10 years, about 350 sawmill plants have shut down only in Belgium, France and Germany. This is largely due to competition with non-European companies, which are buying high quality hardwood logs to be exported and processed outside Europe, depriving European sawmills of necessary raw materials. It is undeniable that the lack of material availability is causing an irreversible process of deindustrialisation. Moreover, it has been our common ecological goal to strengthen stable mixed forests in Europe. A part of this common goal is also to preserve the sector, which is able to process hardwood logs. The current developments put the sector all over Europe at

risk. Manufacturing Industry plays an irreplaceable role in driving growth and economic development. Additionally, the European sawmill industry contributesto the development of green jobs, particularly in rural areas and provides a basis for higher-added value products to be manufactured in the European Union from its natural resources. For this reason, it is essential to preserve the existence of this sector and possibly to enhance its competitiveness.

Yours sincerely,

Maria Noichl MEP (S&D)
Alessia Mosca MEP (S&D)
Paul Brannen MEP (S&D)
Norbert Lins MEP (EPP)
David Borrelli MEP (EFDD)
Jean-Paul Denanot MEP (S&D)
Maria Arena MEP (S&D)
Edouard Martin MEP (S&D)

6.9.2 Oak logs ban by Croatia

Last June 2017, an oak logs and fresh timber ban has been put in place by the Croatian Government.

According to the information we had received **this logs ban has been approved on the basis of phytosanitary reasons**.

- In particular, the Regulation on limited transport of oak logs was introduced in Croatia on June 3rd. It is a phytosanitary measure, implemented in order to prevent spreading of the harmful organism (Corythucha arcuata), and it is expected to last for the upcoming two years. The endangered species are oak (*Quercus robur* and *Quercus petraea*). Any transfer of wood which has completely or partially retained its natural surface (with or without bark) and plant material is restricted. Transport of the aforementioned species is permitted from the place of production (cutting and making) to the place of processing on Croatian territory, by the shortest route.
- Prior to further transport or putting on the market, such timber should be processed - treated in order to lose its formerly completely or partially retained natural round surface and dried (containing less than 20% moisture).

Nevertheless, several press-releases stated that the measures introduced by Croatia seem to have economic reasons rather than being a justified phytosanitary measure. "*The Croatian Society of Manufacturers of Forestry and Reconstruction Works annually, produces five million cubic meters, and the requirements would be far greater. We would like that our wood processing companies might be able to give the most added value to their product having direct positive effect on the rural development*" said Krunoslav Jakopčić, president of the Croatian Forestry Directorate.
http://www.vijesti.rtl.hr/novosti/hrvatska/2684131/tezak-udarac-za-svercere-zabranjuje-se-izvoz-hrastovih-trupaca/

Another press release echoes the above mentioned one: "*The Ministry of Agriculture issued a decree on a two-year ban on the export of oak logs. The official reason for the issuance of this order is the appearance of a beetle that attacks and kills oak trees. Unofficially, this is measure aims at halting the enormous outflow of raw materials from Croatia into the EU countries, but also, for example, China and Egypt, where excellent export prices are achieved and where cheap furniture comes at a lower price than can be produced by domestic producers.*"
http://www.poslovni.hr/hrvatska/hrastova-stjenica-ministru-tolusicu-pomogla-da-spasi-hrvatske-trupce-328729

On occasion of the Standing Committee on Plants, Animals, Food and Feed (Section Plant Health -PAFF Committee) meeting held on 22-23 February 2018, several Member States expressed their concern on the uncertainty of the effectiveness of the phytosanitary measures currently taken by Croatia. They also expressed concern on the lack

of knowledge in relation with the spread of the pest that is already known to be present in 8 Member States.

To this regard the Commission questioned why no official notification of outbreak has been received, beside the scientific based motivation letter sent by the Croatian Government in order to explain and justify the logs ban. The Commission invited Member States to send by the end of February their position on the need to take European measures against this pest or not. The Commission also invited Member States to send any scientific information on this pest. A final decision is expected to be taken by the end of April 2018.

6.9.3 The Oak Day, London 18 April 2018

On Wednesday 18th April 2018, the Timber Trade Federation (TTF) and the European Organisation of the Sawmill Industry (EOS), held a conference specifically focused on the production and trade of Oak at The Building Centre, London. The event was attended by over 100 delegates from all across Europe.

The TTF Managing Director, David Hopkins, introduced the speakers explaining the commitment of the Federation to collaborate with European partners, such as the EOS, in order to boost international trade and develop high-quality standards.

The first presentation was the one given by EOS. The European Organization of the Sawmill Industry gave a short introduction about its members and activities. It was recalled that EOS is the only Brussels-based Organisation that represents the interests of the primary mechanical wood processing industry. EOS focused his presentation on the relative stagnation of the hardwood market production across Europe over the last 10 years. While the production of sawn hardwood is doing relatively well over the last few months, it was stressed that the total production in the EOS country members is still 20% than before the global economic crisis of 2008-2009. This is due to a number of factors. First of all, some important sales markets have been relatively subdued over the last few years. EOS showed the Eurostat index of manufacturing activities, which in most European countries was in 2017 at the level of 2010. Then, it was emphasized that also the parquet market across Europe remains much weaker than it was a few years back, though there has lately been a recovery. EOS reminded that over 80% of European parquets are out of oak. However, the hardwood sector is negatively impacted not only by weaker sales markets, but also by raw material shortages. Indeed, EOS recalled that several EU commercial partners have enacted log export ban policies primarily to bolster their domestic timber industry. Log export bans have the tendency to lead to market inefficiency and they negatively affecting timber's supply. Additionally, China's flourishing economy, coupled with policy constraints limiting domestic forest production (due to a logging ban), has resulted in skyrocketing forest product imports over the last several years. China's log imports (H.S. code 4403) for 2017 were about 45 million tons, about 5% higher than the 43 million tons in 2016. Exports of logs from the EU to China have soared by 181% in the last 10 years (2016 compared to 2007, source Eurostat). This is affecting, in particular, three European countries: France, Germany, and Belgium. This growing import demand is having major impacts particularly on European oak producers: for several years - in which alone -, European hardwood sawmills have been denouncing a lack of oak (and beech) due to the exports to China. The shortage of raw materials is causing many sawmills to keep

production lower than it could be. In some cases, sawmills are forced to close: around 30% of the hardwood sawmill plants have shut down in France, Germany and Belgium in the space of a decade.

Acknowledging this situation - as EOS informed - both the EU Parliament and the European Economic and Social Committee have invited Member States to ensure that "wood supply from the region's forests is sufficient to satisfy, on a sustainable basis, local industries' needs and society's needs".

Two speakers from Croatia followed the presentation given by EOS: Marijan Kavran, Director of Croatian Wood Cluster, and Martin Kunštek, Managing Director of Slavonski Hrast (Slavonian Oak). Mr Kavran explained the importance of oak products for Croatian exports: "thanks to the high quality of Slavonian oak", a number of different products are exported abroad. For instance, Croatia is the 4th largest world producer of massive parquet, courtesy mainly of Slavonian oak. Mr Kavran highlighted how some major issues - such as pests control and transport ban - are currently preventing the sector from achieving its full potential. The transport ban of Slavonian oak which is in place since July 2017 is meant to make sure that the pest which is affecting the Slavonian oak in Eastern Croatia does not get widespread elsewhere. However, Mr Kunštek, in his presentation, while also reiterating the points expressed by Mr Kavran, stated that most probabily the government put in place this measure in order to increase employment in the local sawmill industry.

On behalf of the Ukrainian Association of Wood Processors (UADO), Vasyl Masyuk, Editor and publisher of newspaper, gave his contribution to the conference via Skype. He illustrated the state of the forestry and wood processing industry in Ukraine, also showing the measures adopted by Kiev to reduce illegal logging and support sustainable forest management across the country. Overall, the Ukrainian forest surface is growing: the total average increment reaches 35 million m^3 already in 2013. Only in the Western part of the country forests (which are fully in the hands of the state or state-related actors) are certified (FSC schemes). The annual volume of merchantable wood harvested in Ukraine is 15-18 million m^3. Coniferous forests occupy 43% of the total territory (35% is Pine). Oak is the second wood species in Ukraine, accounting for over 28% of total Ukrainian forests and followed by beech (9% of the total forest area). The roundwood ban is currently in place until 2027 and it is benefiting local Ukrainian companies. Since 2016, the Ukrainian State Agency of Forest Resources of Ukraine (Derzhlisagentstvo) implemented a unified system for electronic accounting of timber for permanent users. The measure is expected to mitigate risks of fake documents use at timber sales. The unified system assumes a single format for the waybills that will be linked with electronic timber accounting, financial accounting and a certificate of timber origin.

Rafał Gruszczyński, Project Manager and Analyst at the Polish Economic Chamber of the Wood Industry, presented the latest trends in Polish oak wood production, underlining how high prices and scarce material availability are affecting trade with European partners. Mr Gruszczyński emphasized the importance of oak in Polish tradition. Sales of oak sawlogs from state forests (in Poland private actors own only a minor percentage of forest resources) are hovering at slightly more than 500,000 m^3 over the last few years. Prices are on the rise (in 2018 77% more than in 2010). Mr Gruszczyński assumed that the export of roundwood to China is currently not a problem for Poland probably because the timber auctions sale rules are extremely complicated and it is very challenging to take part in them. Exports of oak sawnwood amounted to around 85,000 m^3 in 2017: 29% to Slovakia, 29% to Austria, 18% to Germany and 1% to China.

The round of presentations ended with Jean-Francois Guilbert, Managing Director the French Timber. Mr Guilbert remarked how the decreasing availability of oak logs, and the growing market share of exports to China, have been modifying French sawmills' trade dynamics. 23% of sawing logs harvested from French forests were shipped to China in 2017 (up from 7% in 2007). Logs prices are remarkably increasing while production remains on a much lower level than it was 10 years ago. Recently however the main markets for oak sawn timber are doing relatively well (in 2017 the oak sawn production was 615 000 m^3), with the railways sleepers, flooring, stairs, joinery, barrels, furniture, and carpenter sectors all absorbing between 1% and 4% of oak more than 2 years ago. Exports, however, stand out, with an increase of 15%. However, while a better European economic situation is having a positive impact, a general lumber price increase is not compensating for a major raw material increase, which has a detrimental impact on the sawmill sector. Other notable trends include a very high demand in China from the flooring industry and furniture factories looking for substitution species (such as ash).

The Conference also featured a panel discussion where attendees had the chance to address some key points and debate with the speakers. Main topics included: Trade post-Brexit; Oak wood price and availability; Croatian transport ban; Pests control; International co-operation in the sector.

Host David Hopkins of TTF thanked all participants for their attendance and contribution, before bringing the Conference to a close.

6.9.4 Algeria

In April 2017, the Algerian Governement announced that importers of wood products needed a license in order to be able to import wood products in the country. These measures have negatively impacted the European sawmill industry. Not only EOS regreted the introduction of the system itself, but we expressed concerns on the manner in which it has been implemented by the Algerian authorities. As it has been recognized by the Commission in a report published on 17 November (*Trade and Investment Barriers in the Euro-Mediterranean Region*), the Algerian authorities have given little indications about the methods used to allocate the licenses, which, for several months had not been granted at all. Indeed, the first licenses were given to state importers in the Summer, and starting from the October private importers have also been given licenses. However, the licenses given do not cover the need of local importers and end users. Morevoer, the licenses system, which *per se* is a violation of the Association Agreement between the EU and Algeria signed in 2002 and entered into force in 2005[1], is also designed in such a way to put further obstacles on the way of importers: an importer of goods resold without further processing must make a cash deposit of 120% of the value of the purchased good at the bank servicing the transaction at least 30 days before the good is shipped.

EOS Actions:

EOS has been in touch with the European Commission for several months. We have had two meetings (on 25 April and on 20 July) with DG Trade to share our views on this issue. One of the decisions taken in the last meeting has been to feed DG Trade with data regarding the exports of sawnwood to Algeria. The Algerian market is a vital one for the European sawmill industry as it absorbs 12% of exports in a barrier-free context. In addition to being in touch with DG Trade, EOS has also sent a letter to the Algerian government, stressing that free trade would benefit both sides (copy of the letter is available in English at the end of this paragraph).

Together with Ukraine, Algeria was the second Country with whom the European Union has a free trade agreement and that introduces limitations on the movements of goods (*Ukraine has logs ban in place*). The licences system "*constitutes a hardening of the conditions to export to this country and, as far as the trade relations with the EU are concerned, the announced measures are in breach of the Association Agreement provisions*".

EOS is sympathetic with the economic challenges that the Algerian government is confronted with, but believes that its exports can help the Algerian economy cope with its fast demographic expansion and urgent needs of housing.

Algeria imports of sawnwood: -16,9% sawn hardwood (2016 compared to 2015) and -15,7% sawn softwood (2016 compared to 2015)

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1 The "Establishment of WTO-compatible free trade over a transitional period of up to 12 years" was one of the aims of the agreement: http://ec.europa.eu/world/agreements/prepareCreateTreatiesWorkspace/treatiesGeneralData.do?step=0&redirect=true&treatyId=821

REPORTER/PERIOD	Sawn hardwood									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AUSTRIA	519	528	66	124		34	154	211	151	461
BELGIUM	1638	23581	1450	2376	4689	9166	9552	11167	12205	12876
GERMANY	457	491	891	448	950	927	1405	1776	1608	2300
FRANCE	22521	18432	25849	22613	23881	21302	21693	23871	31845	15692
GREECE							195	655	383	304
CROATIA	128	619	201	116		492	236	348	2514	6608
ITALY	126	603	7	363	402	556	1778	2272	598	310
LITHUANIA									508	
PORTUGAL								5	350	2
ROMANIA	3612	5432	3972	5963	8519	6065	4910	5519	4300	6434
SLOVENIA	31	1115	2032	2177	3023	2039	723	2533	1822	1768
TOTAL EU	**29032**	**50801**	**34468**	**34180**	**41464**	**40581**	**40646**	**48357**	**56284**	**46755**

REPORTER/PERIOD	Sawn softwood									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AUSTRIA	216401	202079	112142	104348	59166	44155	16777		3510	57
BELGIUM	19267	57047	86013	73973	53016	48262	52838	24687	26042	10738
GERMANY	10880	12296	10871	29986	54672	178820	161524	186945	127192	85557
ESTONIA		3613	9864	13670	6943	3348			0	
SPAIN		1017	40	127	228		789	1144	160	172
FINLAND	483946	424331	305459	402516	409283	458503	497165	488596	485442	489775
FRANCE	10996	29642	63887	66419	42494	56724	69641	58935	60590	39538
UNITED KINGDOM			4000							
GREECE					650					
CROATIA	600	14	3	1202	998	2133	14166	47485	40000	39951
ITALY				178	79	7347	185	1	2153	13
LITHUANIA									980	
LATVIA	4410	22904	15284	26868	17113	9883	10110	5063	21289	2939
PORTUGAL						3207	10864	6624	12374	13188
ROMANIA	3162	3884	13793	21603	18459	1767	33353	19170	614	40
SWEDEN	355006	321065	441960	577691	536258	561844	542722	604519	612589	566027
SLOVENIA	367336	365193	465397	442436	536124	585145	629316	715890	755155	563120
TOTAL	**1472004**	**1443085**	**1528713**	**1761017**	**1735483**	**1961138**	**2039450**	**2159059**	**2148090**	**1811115**

As of January 2018, the Algerian government has discontinued the import licenses system (except for motor vehicles). An update about the developments regarding the situation in Algeria was provided in the official statement of the Trade Ministry of the Algerian Government.

This information is available on the following link (only in FR): https://www.commerce.gov.dz/actualites/communique-relatif-aux-mecanismes-d-encadrement-des-operations-d-importation-de-marchandises

As results from the reported information, the Algerian government is putting temporary import bans on many products. On other categories of products import duties have been increased.

In the light of the latest developments, the EOS Secretariat has contacted the European Commission, which has shared with us an **unofficial** document (in the attached file to this circular letter, also in FR) which lists all products banned. **As far as wood products are concerned, the banned products include those falling under heading codes 441510 (cases, boxes, drums) and 441520 (pallets)**. No other wood product looks to be affected by these measures, so, based on the present situation, **it appears that, apart from those indicated above, all wood products can now be freely exported to Algeria**.

At any rate, the situation remains fluid.

6.9.5 Ukraine

The EU-Ukraine Association Agreement entered into force on 1 September 2017, having been provisionally and partially applied since 1 November 2014. One of the agreement's cornerstones, the Deep and Comprehensive Free Trade Area (DCFTA), became fully operational on 1 January 2016. In addition to political backing, the EU has also pledged a EUR 12.8 billion support package to support the reform process in Ukraine. Under a jointly defined reform agenda, the EU is closely monitoring progress in a series of priority areas: the fight against corruption, reform of the judiciary, constitutional and electoral reforms, improvement of the business climate and energy efficiency, and reform of public administration. In autumn 2014, the Commission created a dedicated Support Group for Ukraine, comprising experts from the EU institutions and Member States, who provide coordination and advice to the Ukrainian authorities in key reform sectors.

On 9 March 2018 the European Commission has adopted a proposal for a new Macro-Financial Assistance (MFA) programme for Ukraine worth up to €1 billion to support economic stabilisation and structural reforms. This proposal follows a request from the Ukrainian authorities and direct discussions between Commission President Jean-Claude Juncker and Ukraine's President Petro Poroshenko. The new programme seeks to build on the progress made in supporting economic stabilisation and structural reforms under the three previous MFA operations.

The Commission recognises the significant reform efforts undertaken by the Ukrainian authorities in recent years, including in crucial sectors such as energy, public administration, social safety nets, public finance management and the judiciary. Since the expiry of the previous MFA programme in January 2018, reform efforts have continued in Ukraine, including on some of the four measures that had remained outstanding and prevented the disbursement of the final tranche of that programme. One of these commitments has now been fulfilled, with the establishment of a central credit registry. On the other outstanding measures from the previous programme, more progress is needed. It is important that the reform momentum be maintained to fight corruption, promote confidence and support a sustainable economic recovery, jobs and growth.

The Commission proposal for a fourth MFA programme to Ukraine is subject to the approval of the European Parliament and of the Council of the EU under the ordinary legislative procedure.

One of the areas in which more reform is needed is the removal of the logs export ban. On 9 April 2015 Ukraine adopted a law introducing a wood export ban. It came into force in July 2015 and was extended to pine as of 1 January 2017. This law is in breach of Ukraine's commitments under the World Trade Organisation (WTO) and under the Association Agreement, notably the Deep and Comprehensive Free Trade Area (DCFTA).

A draft law has been registered in the Rada in February 2017 to repeal this ban. However, in spite of all the reassurances repeatedly given by Ukraine at the highest political level, this draft law has still not been adopted. Considering that the elimination of the ban — together with two other outstanding conditions — has not been fulfilled, the third tranche of the Macro-Financial Assistance III Programme was not disbursed to Ukraine.

Besides, the European Union (EU) proposed to deliver technical support to reform of the forestry sector and to carry out a dedicated communication campaign which would serve to raise awareness among relevant stakeholders and help ensure a fact-based discussion on the sustainable management of forest resources and the fight against illegal logging. The EU is already providing technical support to institutional reforms in Ukraine's forest governance system in order to advance the principles of sustainable forest management and help overcoming sectoral problems behind the introduction of the wood export ban in Ukraine. Such support is however provided on the understanding that it should not delay the repeal of the wood export ban.

As this is a long-standing problem, EOS has participated in a seminar organized by CEI-Bois and CEPI (Confederation European Paper Industries) about the bareers to trade with Ukraine, Belarus, and Russia. The seminar took place in May 2017 and many officers of the European Commission also participated. One of the EOS Members, Mr Jürgen Bergner of Holzindustrie Schweighofer, gave a presentation showing the difficulties due to the trade barriers that are currently in place.

Moreover, last September 2017 EOS, in cooperation with CEI-Bois and CEPI (Confederation of European Paper industries) prepared a so called "Non Tariff Bareer Report", which was submitted to DG Trade of the European Commission. The report takes stock of the situation by showing the negative impact of the ban on the export of logs for the European industries. EOS, and the other two associations, call for the lifting of the ban with Ukraine. After Russia and Norway, Belarus (see below) and Ukraine are the two largest extra-EU logs suppliers to EU countries. Thus, a major reduction of logs provision from those countries, is negatively impacting on EU member states which are geographically closer to Ukraine, such as Romania.

6.9.6 Belarus

In recent decades, the EU's relations with Belarus have been difficult at times, owing to constant human and civil rights violations in the country. Since 2015 however, Belarus has displayed a more open attitude towards the EU and the Eastern Partnership. Its relations with western countries improved ahead of the October 2015 presidential election, and it played an important role as host for EU-mediated talks on the Ukraine crisis. In response, the EU committed itself to a policy of 'critical engagement' with Belarus, as outlined in the Council conclusions of 15 February 2016.

The EU-Belarus Human Rights Dialogue resumed in July 2015, with the most recent round taking place in July 2017. In order to provide a forum for a policy dialogue at the level of senior officials, the EU-Belarus Coordination Group was established in 2016. The main goal of this body is to steer cooperation between the EU and Belarus and oversee the further development of relations.

Belarus participates proactively in the multilateral formats of the Eastern Partnership. Negotiations on a Mobility Partnership were concluded in 2017 and negotiations on visa facilitation and readmission agreements are underway. Both sides are currently concluding talks on the partnership priorities, which will become the first document to be signed between Belarus and the EU.

EOS is particularly interested in Belarus due to geographical proximity and the limitations to the exports of logs. By means of a resolution of the Belarussian Council of Ministers (No 532 of 14 July 2017), the export ban which was previously in place was officially replaced by a system of export licensing which took effect on 1 August 2017 for a period of 6 months, i.e. until 31 January 2018. This export licensing scheme covers primarily raw wood (HS 4403). On 25 January 2018, the Council of Ministers of the Belarusian government decided to extend the regulations for exporting Belarusian logs to countries outside the Eurasian Economic Union, which expired on 31 December. According to Decree no. 59, permits for exporting logs and rotary-peeled masts (or hoopwood, customs tariff: 4404) must be applied for at the forest ministry. The Decree came into force on 1 February and applies until 31 July 2018. In view of the enlargement of production capacity in the Belarusian timber industry, growing demand for wood can be expected in future.

EOS, in cooperation with CEI-Bois and CEPI (Confederation of European Paper industries) had prepared in September 2017 a Non Tariff Bareer Report, which was submitted to DG Trade of the European Commission. The report showed the negative impact of the export logs limitations in Belarus on the European sawnwood sector. EOS, and the other two associations, call for unhindered trade with Belarus.

The export limitation particularly affected Central Eastern European countries. Latvia and Estonia have traditionally imported a high amount of sawlogs from Belarus, which represents therefore an important supplier of raw material for many Baltic sawmills. Romania was also impacted.

EUWID reports that according to the Belarusian statistics authority Belstat in 2017 exports of softwood roundwood from Belarus to the EU fell by 36% to 1.002 million m^3 (2016: 1.576 million m^3). Conversely, Belarusian exports of sawn softwood to the EU soared by 43% to 1.962 million m^3 in 2017 (2016: 1.372 million m^3). The main market of Belarusian sawn softwood remains Germany (522,000 m^3 in 2017 vs 394,000 m^3 in 2016), followed by Latvia (425,000 m^3 in 2017 vs 251,000 m^3 in 2016) and Lithuania (401,000 m^3 in 2017 vs 267,000 m^3 in 2016).

6.9.7European Commission proposes signature and conclusion of Japan and Singapore agreements

On 18 April 2018, the EU Commission presented the outcome of negotiations for the Economic Partnership Agreement with Japan and the trade and investment agreements with Singapore to the Council. This is the first step towards the signature and conclusion of these agreements. President of the European Commission Jean-Claude Juncker said: "*Today we take a step forwards towards concluding agreements with two of our closest Asian partners, Japan and Singapore. The impact of these agreements will go far beyond our respective shores - it sends a clear and unambiguous message that we stand together against protectionism and in defence of multilateralism. This is more important than ever.*" Vice-President Jyrki Katainen, responsible for Jobs, Growth, Investment and Competitiveness said*: "We now hope for a swift and smooth conclusion of these agreements, which will allow EU firms, workers, farmers and consumers to reap the benefits of these deals as soon as possible*."

Once approved by the Council, the agreements will be sent to the European Parliament, aiming for the entry into force of the trade agreements with Japan and Singapore before the end of the current mandate of the European Commission in 2019; the investment protection agreement with Singapore will follow its ratification procedure also at Member State level.

In 2013 EU governments instructed the European Commission to start negotiations with Japan. On 6 July 2017 the European Union and Japan reached an agreement in principle on the main elements of the EU-Japan Economic Partnership Agreement. On 8 December 2017, the negotiations were finalized and the EU and Japan started the legal verification of the text, also known as "legal scrubbing".

Once this exercise is completed, the English text of the agreement will be translated into the other 23 official languages of the EU, as well as into Japanese.

The Commission will then submit the agreement for the approval of the European Parliament and EU Member States; at the same time, negotiations continue on investment protection standards and investment protection dispute resolution.

6.9.8 The Brexit case

On the 23rd June 2016 the British voted in a referendum to leave the European Union. While this decision will surely have far-reaching geopolitical and economic consequences, up to now, it is premature to draw exhaustive conclusions about the impact of Brexit on Europe. On 29 March 2017, the British Prime Minister Theresa May started the official procedure for withdrawing from the European Union invoking Article 50 of the Lisbon Treaty, starting what it is considered a "*tortuous two-year divorce*" littered with pitfalls for both sides. In addition, in accordance with the same Article 50(2) as applied by Article 106a of the Treaty Establishing the European Atomic Energy Community, Mrs May notified the European Council of the United Kingdom's intention to withdraw from the European Atomic Energy Community.

On 28 February 2018, the European Commission published the draft Withdrawal Agreement between the European Union and the United Kingdom. This is a draft of the agreement on the UK's orderly withdrawal from the EU and including introductory provisions, citizens' rights, other separation issues such as goods placed on the market before the withdrawal date, the financial settlement, transitional arrangements, and institutional provisions – and a protocol on Ireland/Northern Ireland. It shall now be discussed by the Council (Article 50) and with the Brexit Steering Group of the European Parliament before being transmitted to the United Kingdom for negotiation. A final version of the Withdrawal Agreement should be agreed by the EU and the UK by October 2018 to allow for the timely ratification by the European Parliament, the Council (Article 50) and the UK, according to its own constitutional requirements.

The European Council (Article 50) is expected to adopt

additional guidelines in March 2018, in particular as regards the framework for the future relationship and has called on the UK to provide further clarity on its position on the framework for the future relationship.

At the end of the negotiation period, the Commission will present a proposal for an agreement to the European Parliament and the Council, taking into account the framework of the future relationship of the UK with the EU. The European Parliament must give its consent, by a vote of simple majority, including Members of the European Parliament from the UK. The Council will conclude the agreement, acting by a qualified majority representing 72% of the 27 Member States, i.e. 20 Member States representing 65% of the EU27 population. The UK must also ratify the agreement according to its own constitutional arrangements.

An agreement on a future relationship can only be finalised and concluded once the United Kingdom has become a third country. The EU will then be ready to engage in preliminary and preparatory discussions with the aim of identifying an overall understanding of the framework for the future relationship, once additional guidelines have been adopted to this effect. The draft Withdrawal Agreement is based on the Joint Report of 8 December 2017, in which the UK recalled its commitment to avoid a hard border, including any physical infrastructure or related checks and controls, and its respect for Ireland's rights and obligations as an EU member.

The United Kingdom and the EU have committed to honouring their share of the financing of all the obligations undertaken while the United Kingdom was a member of the Union (and in particular the Multi-annual Financial Framework [MFF]2014-2020). As outlined in Part 4 of the Withdrawal Agreement, the transition period will end on 31 December 2020, at the same day as when the current MFF finishes. There is, therefore, no need to make any adjustment to the financial settlement.

The UK has requested to continue benefitting from the Single Market and Customs Union for a period of "around two years." During this period, which will end on 31 December 2020, the entire Union acquis will continue to apply to the UK. This means that the UK will have to comply with the EU's trade policy and will continue to be bound by the Union's exclusive competence, in particular in respect of the Common Commercial Policy. As a result, the UK will remain bound during the transition period by the obligations stemming from all bilateral and multilateral EU-only agreements, i.e. third countries would keep the same UK market access. The UK cannot become bound by new agreements on its own in areas of Union competence unless authorised to do so by the EU.

On 14 March 2018 the Plenary endorsed a resolution laying out a possible association framework for future EU-UK relations after Brexit. Taking into account red lines announced by the UK government, an association agreement between the EU and the UK could provide an appropriate framework for their future relationship, says the resolution adopted by 544 votes in favour, 110 votes against, with 51 abstentions. This relationship could be based on four pillars:

- trade and economic relations (FTA),
- internal security,
- cooperation in foreign policy and defence and
- thematic cooperation, for example on cross-border research and innovation projects.

The EP resolution, prepared by the EU Parliament Brexit Steering Group, stresses the uniqueness of the EU ecosystem with its binding common rules, common institutions and common supervisory, enforcement and adjudicatory mechanisms. This means that even closely-aligned non-EU countries with identical legislation cannot enjoy similar rights, benefits or market access to those of EU member states.

Any framework for the future relationship would also need to respect the integrity of the internal market, customs union and four freedoms, without allowing for a sector-by-sector approach (cherry-picking EU laws). It should preserve the EU's independent decision-making and legal order, including the role of the ECJ.

The resolution welcomes the Commission's 28 February draft of the Withdrawal agreement and expresses support for the transitional arrangements proposed. It also reiterates the importance of securing equal and fair treatment for EU citizens living in the UK and British citizens living in the EU.

The resolution sets out Parliament's input ahead of 22-23 March summit of EU heads of state or government, which is expected to approve the Council's guidelines

for negotiations on the UK's future relationship with the EU. Any withdrawal agreement and future association or international agreement with the UK will need to win the approval of the European Parliament.

Future trade relations between the EU and the UK: Options after Brexit

In March 2018, the European Parliament published a study on the "Future trade relations between the EU and the UK: Options after Brexit".

This study analyses the various options for the future trade relations between the EU and the UK, after Brexit. It examines the various models against the canvas of two distinct paradigms: market integration and trade liberalization. In particular, it finds that an intermediate model, which would allow for continued convergence and mutual recognition in some sectors/freedoms, but not others, is unavailable and cannot easily be constructed for legal, institutional, and political reasons.

The stark choice is between a form of continued membership of the internal market, through the EEA or some comparable agreement, and a customs union or free trade agreement which abandons the integration of the UK and EU markets. That integration is characterized by full participation in the EU regulatory system, and is a comprehensive package of the four freedoms, EU trade and economic legislation, and flanking policies in the fields of competition, state aid, public procurement, and beyond (environmental, social and consumer protection policies). It requires a strong rule of law, in terms of incorporation of the relevant rules in domestic law, and their effective enforcement, subject to supranational dispute settlement. It is particularly noteworthy that the trade liberalization paradigm offers little in the sphere of trade in services. That is not a contingent phenomenon. Rather, it is a function of the basic fact that barriers to trade in services are predominantly of a regulatory nature. The market integration paradigm is capable of overcoming the deeply embedded regulatory divergence, along jurisdictional lines, which characterizes services regulation – though as the EU internal market experience shows, not with complete success. At the wider international level the trade liberalization paradigm has largely failed in ensuring deep liberalization, which would require a high degree of harmonization/convergence/alignment. Those sceptical of trade liberalization may reply that the so-called neoliberal policies leading to privatization and liberalization of certain services sectors prove otherwise.

However, these policies have not been driven by agreements coming within the trade liberalization paradigm, but are to a large extent the product of certain market and political forces. It is clearly also in the EU's interest to promote and negotiate a deep and comprehensive trade and economic relationship with the exiting UK. There are however legal and institutional restraints which cannot be overcome without upsetting the EU's very successful current construction of an integrated market. Associated to those constraints, there are clear political imperatives, which are well known, in terms of not allowing an exiting Member State to cherry-pick and gain advantages not available to nonexiting Member States. This study has also attempted to analyse the fate of existing trade agreements, concluded by the EU. There is a level of complexity here to which there are no easy answers. Beyond these general conclusions, the choices are largely political. However, from the perspective of the author of this study – a legal academic – it is particularly deplorable that the Brexit phenomenon is characterized by such a strong rejection of the role of "common" law in matters of trade and economic cooperation and integration in Europe. The UK rejection of the role of the ECJ, and the desire to take back control, mean a return to intergovernmentalism and a model of international relations characterized by power politics rather than democratic deliberation resulting in shared law. (*Extract of the European Parliament study on the "Future trade relations between the EU and the UK: Options after Brexit*").

http://www.europarl.europa.eu/RegData/etudes/STUD/2018/603866/EXPO_STU(2018)603866_EN.pdf

7. High Level Conferences co-organized by EOS

7.1 The International Softwood Conference, Hamburg 2017

On the 5th and 6th October 2017 the 65th edition of the International Softwood Conference was held in the facilities of the hotel Sofitel Hamburg Alter Wall.

The conference was attended by about 150 participants from all over the world and it was hosted by the GD Holz/German Timber Trade Federation, and, as usual, by the European Organization of the Sawmill Industries (EOS) and the European Timber Trade Federation (ETTF).

The Conference opened with the traditional market analyses provided by authoritative experts in the sector. The development of production and consumption suggests that the moderate growth which was observed in 2017 is expected to continue into 2018. In Europe the situation can be described as positive with most markets on the rise. Mr Andreas von Möller, President of ETTF, provided a comprehensive overview of the construction activity in Europe, showing that the confidence index is going up and the production index has reached the highest levels since 2010. The European markets are solid and reliable: Mr Sampsa Auvinen, President of EOS, underlined in his presentation that the European demand is expected to continue to increase. A buoyant construction activity, along with a growing awareness of the benefits of using wood in construction, is indeed pushing up European demand to the highest levels of this decade.

While the European markets remain the traditional destination of European production, a promising trend is the increasingly important role played by extra-European exports for the European industry. The area of the world which stands out is East Asia, particularly China, which is booming. Japan as well remains an important export destination for many European sawmills. The US market is also dynamic as housing starts reached their highest level for some years. Therefore, the picture at global level is quite rosy. The long-term potential of the market is impressive

In the picture above, the 2017 ISC audience

as per capita consumption in some of the fastest growing countries in the world is still very low compared to North America and North European countries.

However, a possible source of instability is the British market. The uncertainty around Brexit could take its toll on the British economy, which could result in decreasing import volumes. But stakeholders emphasized that the high demand of other regions would be able to make up for a possible drop of exports to the UK. Another important challenge is connected to raw material availability: in the medium-term there could be some more significant shortages which could negatively impact on the industry. Raw material mobilization will thus play an increasingly relevant role. These themes were thoroughly discussed also during the panel discussion in which high-level stakeholders coming from different countries - such as Denmark, Austria, the United Kingdom, the Netherlands, France, and Latvia - also emphasized the growing importance of education: the enormous potential of wood in construction will be fully tapped if awareness of the properties of timber will be spread among architects and builders. To this end, targeted promotional campaigns are important.

In sum, the moderate economic growth which is taking place in Europe is expected to continue into 2018 and will have a positive impact on the timber market in the EU. Dynamic export markets are also a cause for optimism. However, the industry needs to remain vigilant in a competitive landscape characterized by growing complexity.

The next edition of the International Softwood conference will take place in Latvia's capital Riga in October 2018

KEY MESSAGES OF THE 2017 ISC: THE (EUROPEAN) MARKET FOR (SAWN) SOFTWOOD, HOLGER WEIMAR (THÜNEN INSITUTE OF INTERNATIONAL FORESTRY AND FOREST ECONOMICS)

The presentation of Mr Weimar is the first one of the ISC 2017. He tackles the market from a broad perspective as he analyzes production and trade flows at global level.

The most significant take-home messages of his presentation are the following:

- The forest surface at global level is decreasing by 7 million hectares per year (reference year: 2005, last observation: 2010), but with significant exceptions, including Europe, North America, China, Russia, and India. In Europe forests are especially growing
- The production by continent of industrial roundwood (softwood) is as following (2016 data): Europe (incl. Russia) 41%, North America 38%, Latin America 8%, Asia 7%, Rest 5%. The total production was 1.05 billion m^3 in 2016
- China is dominating imports of industrial roundwood (softwood) accounting for more than 39% of total imports at global level (33 million m^3). Austria and Germany complete the podium, followed by Sweden and South Korea. Largest exporters are New Zealand with almost 15 million m^3, Russia with 12.7 and the US with 10.
- Mr Weimar observes that the production of sawn softwood suffered more than the production of sawn hardwood during the global financial crisis but recovered much faster, while sawn hardwood production is still relatively struggling. North America was the area which was affected the strongest by the crisis but recovered much faster than Europe (both US and Canada are now growing at a faster pace than European countries). Russia production massively increased (from 21 million m^3 in 2005 to almost 34 in 2016). Brazil is quite stable at around 9 million m^3. Asia now accounts for 16% of global production, up by 4% percentage points compared with 10 years ago. But Japan production decreased (12 million m^3 in 2005, around 8 in 2016)
- Roughly one third of global production is traded. Main importers USA (28 million m^3 in 2016), China (22 million m^3), and, a distant third, UK (6 million m^3). Japan displaced Egypt in the fourth place. Largest exporters are Canada (32.5 million m^3), Russia (25 million m^3), followed by Scandinavian duo of Sweden (13 million m^3) and Finland (8.7 million m^3)
- Mr Weimar looks at the future: while according to some forecasts the wood supply could increase (reference year 2010, projection to 2030), there might be areas which will face shortages. An increase in planted forests looks sure, and plantations ensure a higher supply of raw materials than other forests

MARKET DEVELOPMENTS - EUROPEAN USERS, ANDREAS VON MÖLLER (EUROPEAN TIMBER TRADE FEDERATION PRESIDENT)

Mr von Möller analyzes the softwood market from the user side. He starts his presentation by focusing on construction activity, which at EU level in the course of 2017 reached for the first time the level of 2010. France and Italy (particularly the latter) are still suffering, while Germany and UK are doing fine. In addition to this, the confidence is positive in all of the big European countries – only in UK the confidence

is unstable. Building permits have been increasing for three years and reached again the level they had back in 2010.

The door sector at EU level is recovering ground (+2% in 2016 vs 2015, though still far from pre-crisis peak), with Germany, Italy, Poland and Spain doing particularly well. UK and Sweden are instead suffering. Wood windows production is slightly declining (-1%); while most EU countries are actually growing the sector in the UK declined by 20%. Even the window sector is still about 20% below the pre-crisis level.

Mr von Möller goes on to make a one-by-one country review.

- In the Netherlands, he argues, there is a positive general perception. GDP growth is solid, unemployment keeps declining and the housing permits doubled compared to 2013, but they are still below the pre-crisis level.
- In Greece the situation is negative, though not as bad as in many of the previous 10 years. The cumulative loss of GDP since the beginning of the crisis was approximately 30% and the construction sector went down by 87% compared with 2005. Markets for softwood are expected to stabilize
- In Denmark, softwood imports are on the rise amid a positive economic context. Construction sector is doing well
- In France, construction market lost about 30% in 5 years but building markets have seen a recovery in 2017 (particularly multi-family house). Consumption of sawn softwood is slightly growing
- In Belgium, a welcome development is the share of wood in new dwellings: from 6% in 2011 to 9% in 2016. 2016 was a record year for renovation
- In Spain construction is increasing in many of the most important cities. Overall the market is doing relatively well, but the financial system remains tight and is in the process of being restructured
- In Italy the general economy is exceeding expectations in 2017 and a slight improvement in the construction market is expected. Import volumes of sawn softwood are expected to grow, as well as cross laminated timber, while a decrease of glulam beams imports is expected
- In Switzerland GDP growth is moderate and unemployment remains very low. In 2016 turnover slightly declined and in 2017 is expected to remain at the same level of previous years
- In the UK the situation is uncertainty due to Brexit negotiations. GDP growth expected to hover around 1.5%. Housing is expected to slightly grow
- In Germany development of turnover is satisfying. Expectations remain relatively positive: 30% of GDHolz Members expect further increases by the end of the year.

In sum, Mr von Möller argues that the general situation in Europe is positive in 2017 and the sentiment in the market is also good, which bodes well for the future. Demand and consumption increased, and financial conditions improved. However, conditions may rapidly change, so he invites markets operators not to rest on their laurels as the economic picture will not be positive forever.

MARKET DEVELOPMENTS - EUROPEAN PRODUCTION, SAMPSA AUVINEN (EUROPEAN ORGANISATION OF THE SAWMILL INDUSTRY PRESIDENT)

The third presentation is given by EOS President Sampsa Auvinen; Mr Auvinen focuses his presentation on the European producers. He starts by ascertaining whether his own forecasts made during the ISC of 2016 were true.

- He correctly predicted that European demand continued to increase, albeit slowly. And that the overseas markets continue to play an increasingly important role for the European sawmill industry. Also, he was right in thinking that financial performance of the European sawmilling industry has improved in 2017 but remains unsatisfactory in parts of Europe. Exchange rate fluctuations continue to affect the industry and contribute to redirect trade flows as currencies appreciate or depreciate. He thought that challenges connected to the sale of by-products could hamper production, but that was not the case.
- He analyzes production in Europe with a particular focus on the EOS countries, where, total production of sawn softwood increased by 2.1% in 2016 and reached 81.6 million m^3. In 2017, production is expected to increase 3.15 % to 84.2 million m^3. Germany expects a positive 2017 and there are good signals even for next year. Austria's production will increase this year to level in 2018

while France will exhibit slight growth and Switzerland remains stable. Sweden, after a slight dip in production in 2016 has rebounded in 2017 and will probably continue to grow while Finnish production is on the rise though in 2018 it may remain stable compared with 2017. After 4 years in a row of growth, probably in 2017 Norway's production has shrunk a little, while Romania production has slightly grown in 2017. In the Baltics, Latvia's production remains at a high level in 2017 but may decline a little in 2018.

- The weighted average analysis of raw material availability suggests a slight decline compared with 2016 and it is now a little below a satisfactory level on average in Europe, though significant regional differences persist. Sawlogs prices decreased in 2016, but there are signals which point to a reversal of the trend.

- The macroeconomic situation in Europe looks relatively good and economic growth should continue at a moderate pace. A satisfactory development in construction activity across Europe is welcome by the industry. In short, Mr Auvinen argues, the market is doing fine and there is also optimism regarding the future – building with wood is becoming more and more fashionable – and the increasing demand for CLT will further boost the demand for sawn timber. Buoyant overseas markets complete an overall rosy picture that the uncertainties surrounding Brexit are not spoiling.

- An interesting development is connected to Asia: It looks like in the region – not only in China and Japan – the appetite for softwood is growing. Considering that the relative per capita consumption is relatively low, the scope for growth is enormous. Apart from the two giants, South Korea is currently the most important market, but India has the potential to become a very relevant market as the economy grows

- Regarding China, the growth of sawn timber consumption and demand from China has become extremely important for Scandinavian sawmills. China is now the largest export market for Finland. Total European export to China will be around 3 million m^3 in 2017. It is interesting to note that, in spite of a relative slowdown of the Chinese economy, sawn softwood imports accelerated. There are however signs of overheating in the economy, which the government is trying to tackle.

- Japan, despite an aging population, remains a very important export market for Europe. Housing starts around 1 million according to most recent data

- A source of uncertainty is the MENA area (but growth of exports to Asia eased the pressure for many sawmills): The region is going through difficult times due to continued political uncertainty and low oil price. But this looks like 'new normal' and the industry must get used to this. Algerian import licenses rule might not be the only protectionist move in the region as the countries try to balance their economies.

- The US market will import over 1 million m^3 from Europe in 2017, which is almost double volume compared to 2016. Larger European sawmilling companies from Sweden and Germany have established terminals in the US East Coast and serve their customers on a regular basis. The good fiber quality is attracting more and more buyers that need a higher quality. It remains to be seen how the US Canada Softwood Lumber Dispute will unfold over the next few months. This may have repercussions on the trade with Europe.

- There is good financial health across the industry, though there are exceptions, such as in Finland, where sawlogs prices are growing, while sawnwood prices remain relatively low, which is causing Finnish industry to have a bad margin. The situation is more balanced in Germany and Sweden. Most big players overall display good results.

- In sum, Mr Auvinen argues that the situation is positive and there are reasons to be optimistic: global demand of sawn timber is expected to increase particularly in Asia. Financial performance of the European sawmilling industry is good, but remains unsatisfactory in some parts of Europe. He thinks that prices for raw material and sawn timber will continue to increase. The next big challenge, he predicts, will be the availability of raw materials. Also, geo-political tensions may spoil the picture as there are many hotspots across the world. Climate change will have a more and more relevant impact.

CANADA (DON KAYNE, PRESIDENT AND CEO CANFOR CORPORATION)

Mr Kayne's presentation is focused on North America, in particular on Canada. He thinks that there are great opportunities when it comes to building with wood: he

brings up the example of the world's tallest mass timber building, which was completed in Vancouver. It is hybrid system and was completed in just 9 weeks and a half which means 18% faster than a concrete building of that size.

Then, he focuses on exports. He thinks that China will keep being by far the largest import market and for exporters will be crucial to take advantage of the opportunities that there are in China. It is interesting to note that China is using more and more products with a higher added value. Canada expects to increase its exports to China until at least 2020. A growing middle class, urbanization, and the necessity to tackle climate change will all be factors that foster an increase in the imports of wood products.

Japan continues to be an important market. The falling working-age population will result in smaller labour force and drive further automation in the housing market. Growth in non-residential and mid-rise will increase wood use outside of typical housing segment.

The next big market promises to be India, where there is huge potential given the very low per capita wood consumption compared with European or North American countries. If India consumed as much softwood lumber as Europe, it would need to import a whopping 184 million m^3.

Finally, Mr Kayne shows the status of the US and Canada Softwood Lumber Trade Dispute (SLA). There might be a renewal of the agreement between the US and Canada, but preliminary anti-dumping duties (6.87%) are being applied and will expire at the end of the year, while countervailing duties (avg. 19.88%) were applied from May 1 to August 25. If no agreement, final duties will be announced in January 2018.

In sum, Mr Kayne expects strong demand in Asian and North American markets over the next few years, and a shift to more hybrid construction and building automation in all markets. Governments will increase focus on green building initiatives around the world which will help the industry. A first-class supply chain will be critical in connecting the world. He thinks that the US and Canada Softwood Lumber Trade Dispute will be solved, though it is unsure when. He expects lumber prices to be volatile, but probably higher through the end of the decade.

USA (MARC BRINKMEYER, IDAHO FOREST GROUP CHAIRMAN)

Mr Brinkmeyer's presentation is also about North America, but his focus is rather on the US. At macro-economic level he focuses on the measures undertaken by the Trump administration. They include rollbacks to regulation, and changes to improve the interface between businesses and the federal government. Trump's cabinet is qualified but still understaffed. The stock market is doing very well but the pace of the post-crisis recovery is remarkably slow in historical terms.

US lumber demand is forecast to keep increasing at a moderate pace at least until 2019. Also, home construction is expected to increase at least up until 2019, and the growth will be connected mainly to the single-family sector (which is positive as more wood is used than in the multi-family sector). There are however concerns connected to a shortage of manpower across some segments of the industry.

After emphasizing the importance of promotional activities, Mr Brinkmeyer goes on to analyze the wood share in the various construction segments (he quotes the following sentence from the US cement association: *Because of… aggressive promotion, lumber has gained significant market share at the expense of concrete. Concrete's share of the above-grade wall market has declined from 14% in 2005 to about 7% currently*). He shows that in the 1-4 story residential segment wood has a high percentage but declining (from 86% in 2010 to 77% in 2015). In the 5-6 story residential segment the percentage of wood is 49% in 2015, while a welcome development is the increase of percentage of wood in the 5-6 story non-residential segment (from 2% of 2010 to 8% of 2015). There is thus a lot of potential there.

Regarding the US and Canada Softwood Lumber Trade Dispute (SLA) he thinks that the key issue in negotiations will be the Canadian market share in the US market (which was around 32-34% before the crisis, 26-28% for some years after, and went on to grow to 32% in 2016).

A recurring theme of the International Softwood Conference 2017 is the low per capita consumption of sawn softwood of some fast-growing markets such as China and India. There is a lot of potential for exporters if per capita of consumption increases in those countries.

Finally, he argues that in 2017 the lumber market experienced multiple events that pushed the market to the extreme high end of the historical price range; production did not respond to the higher margins like it does normally due to a combination of factors (long wet spring followed by an early and severe fire season) that restricted resource availability. He emphasizes that consensus forecasts for New Home Construction and Repair & Remodel call for mid single-digit growth for 2018.

NORTH AFRICA - MOHAMED LOUDGHIRI (SOFTWOOD PROCUREMENT MANAGER GROUP ROBELBOIS)

Mr Loudghiri presentation is about the MALT region (Morocco, Algeria, Libya, Tunisia). The region shares many features (such as the burgeoning demographics) but all countries have their very specific features. He notices that since the oil prices dropped in 2014 the imports of sawn softwood also dropped by 14% interrupting a steep growth trajectory which began in the previous decade. The estimates for the next couples of years however are slightly more positive: in both 2018 and 2019 growth would finally resume (barring a major political crisis).

Imported species by MALT countries include pine (redwood, 61% of all imports) spruce (33%), and maritime pine (6%). Top exporters to MALT region are 3: Sweden, which maintains a share of around 40% of exports in 2017, Finland, with a growing share of 34%, and Austria, with a declining share of around 21%.

Mr Loudghiri then proceeds to make a one-by-one review of the MALT countries:

- Morocco: a relatively stable political and macroeconomic picture, trying to diversify imports but there are high social and economic disparities. Construction sector underwent a slowdown since 2012, sawn softwood imports hovering around slightly less than 1 million m^3 for some years. Slight growth of imports expected in 2018 and 2019 but a danger consists in the fact that materials such as PVC are more and more used.

- Algeria: uncertainty regarding future trajectory, excessive red tape. A high dependence on oil exports caused a shortage of hard currency which pushed governments to reduce imports. From April 2017 and import licenses system is in place, but licenses were initially not granted and even in Autumn 2017 cover only part of real need. When system will be fully in place, imports will resume. Forecast for 2018 is 1.4 million m^3 of sawn softwood imports, down from 2 million of 2015.

- Tunisia: economy diversifying, political transition ongoing. But high unemployment rate (common factor in many countries across the region) and security and safety issues negatively impacting on tourism, which is very important for Tunisia. Decline of imports in the last few years but expectations are of slight increase for 2018 (around 350,000 m^3 of imports) and 2019

- Lybia: Smaller market, country devastated by civil war. Necessity to rebuild infrastructure and housing, imports at around 50,000 m^3 in 2017 down from almost 400,000 m^3 in 2013. Thus, there is potential if peace is restored

In sum the region has potential but many factors are negatively impacting over the last few years. In spite of this, slight growth is expected in 2018.

EGYPT, IBRAHIM ELSHAL (ELSHAL TIMBER CEO)

Mr Elshal presentation is about Egypt.

Egypt is a very important export market for several European countries. Overall Egypt imported 4.4 million m^3 of sawn softwood, which represents one of the highest figures in the world and 38% of total imports of MENA (Middle East North Africa) area. However, in 2015 imports were 5 million m^3.

Egypt has a big and growing population (98 million people), complete dependence on imports and no wooden homes or buildings. Mr Elshal correctly predicted in 2016 that bad economic figures would remain in the short term, austerity measures would be implemented by the government, there would be a depreciation of Egyptian Pound, a lack of finance which would negatively impact on construction activity: all this has contributed to a decline of sawn softwood imports. However, the forex crisis that he predicted was largely staved off and there are signs that the market is improving. Forex reserves have increased over the last few months. The weak Pound had the side effect of causing very high inflation. The economic programme of Egyptian government includes positive elements such as the introduction of a Value Added Tax, allowing the Egyptian pound to float freely and lifting subsidies. It was praised by the International Monetary Fund.

The austerity programme, however, caused a decline in demand which negatively impacted the construction market. There is confidence that the economy has now absorbed the shock of reforms and construction market is expected to grow.

There are signals, so, that the drop of softwood lumber has bottomed out. Regarding the exporters to Egypt, Mr Elshal underlines that Russia is not any longer the main provider of wood to Egypt. The Scandinavian duo of Sweden and Finland exported, combined, 1.1 million m^3 (Finland slightly more than Sweden) in the period Jan-July 2017. Overall imports in 2017 are expected to fail to reach 3.5 million m^3, down from 4.4 in 2016 (-21%). By the end of the year Finland is expected to export 1.2 million m^3, Sweden 1.1, Russia 800,000 m^3, and the Baltic countries around 200,000 m^3.

Mr Elshal reports that around 70% of softwood lumber is used in construction. Egypt imports about 75% redwood, 25% whitewood. Like in other countries of the area, PVC market share in windows is increasing.

Mr Elshal concludes its presentation by outlining what he thinks the salient elements of the market will be over the next few months:

- Economic problems will remain, but for the short-term, government borrowing will postpone any severe crisis.
- Construction market is about to recover from the EGP flotation shock, and gradual growth is expected.
- Softwood imports seem to have bottomed out and already started to recover.
- Import of about 3.5 million m^3 is expected for 2017, and about 4 million m^3 for 2018.

RUSSIA, SVYATOSLAV BYCHKOV (ILIM TIMBER MANAGING DIRECTOR)

Mr Bychkov's presentation is about Russia. He begins his presentation by stressing that currencies volatility really had a strong impact on softwood lumber trade. For instance, the sharp depreciation of the Egyptian pound made exports to Egypt much more difficult. Following the strong depreciation of the period 2014-2015 the Russian ruble appreciated by almost 20% in 2016 versus the dollar.

Mr Bychkov then stresses that the Russia forest resources are sharply growing, particularly in Siberia and the Far East. Russia industrial roundwood exports peaked in 2006-2007 with around 50 million m^3 exported but then the combination of customs duties with government support for investments in wood processing limited log exports which stabilized around 20 million m^3 over the last few years. Sawn softwood exports reached, instead, 24 million m^3 in 2016 (+8% vs 2015) up from 5 million m^3 at the end of the '90. Russian domestic consumption was around 10 million m^3.

China softwood saw log imports from Russia account for 85-90% of total Russian saw log exports and consists mainly from high quality Siberian pine Ø 30 cm and larger. Finland, Sweden and Germany are the major European importers of saw log from Russia, mostly high quality 6 m Spruce. In 2016 it supplied about 11 million of sawn sawlogs to China which compares to 25 million m^3 in 2007. Conversely, Russia became leading supplier of sawn timber to China in 2016 with about 12,8 million m^3 (2007: less than 5 million m^3), which is tantamount to an increase of 30%, which more than compensated a decline of 20% both to MENA (to 2.8 million m^3) and to the CIS countries (to 3.35 million m^3). Exports to Europe reached 3.45 million m^3 in 2016 up from 3.2 million in 2015.

Mr Bychkhov also emphasizes that Chinese sawmills operating in Russia are applying minimal levels of log processing to be qualified as lumber by Russian Customs and avoid log export duties.

To prevent illegal exports mainly to China, the Duma adopted in July a set of amendments to the Forestry Code first adopted in 2006. A GPS system surveying the forest stands, reports on the use of forests and reports on reforestation will all serve this purpose. Moreover, two years ago, an electronic system for monitoring of round wood turnover on federal level started to operate.

Finally, he dwells on some important points for the future:

- China remains the key market for Russian logs and lumber with increasing share of lumber exports
- Redistribution of volumes from MENA and CIS markets and ramp up of saw mill capacity leads to growth of lumber export volumes from Russia to China
- Short term competitive advantage with ruble devaluation was over in H2 2016 and ruble strengthening in 2017 is bringing sawmill margins to low level

THE UK SOFTWOOD MARKET, CHARLES HOPPING (CHAIRMAN HOPPINGS SOFTWOOD PRODUCTS PLC)

Mr Hopping's presentation is about the latest developments in the United Kingdom. Brexit is of course one of the main themes of his presentation. According to a survey, almost 80% of the TTF members wanted to remain in the EU. Presently, he underlines, there is a lot of confusion around Brexit and it is impossible to say what the final outcome will be.

Another fact which is prevalent in the UK discourse is the Grenfell tower fire. As a result of it testing of cladding on high rise buildings has revealed much of it to be liable to aid the spread of fire.

A public enquiry will now look at:

- UK Building regulations
- Enforcement of regulations and subsequent management of buildings

It remains to be seen how new regulation will impact the construction market, but it is safe to say that there will be changes. In general, the construction market remains lively, with housing starts in the UK growing over the last few years and projected to grow at least until 2019. The infrastructure segment should sharply increase, while private housing is expected to decline along with industrial and commercial non-housing.

Regarding the production of sawn softwood, it grew considerably over the last few decades, from 1.5 million m^3 in 1980 to 3.7 million m^3 in 2017. The demand however is very high, and imports have been growing for years and are expected to reach almost 6.5 million m^3 in 2017 (projection for 2018: stable imports). The largest supplier of softwood lumber to UK remains Sweden, with 42% of total imports, followed by Latvia (17%) and Finland (15%). Russia, Germany and Ireland have a share of 6% each. Consumption is growing since 2015 when it was 9.1 million m^3 and could pass 10 million m^3 in 2018.

Overall, the mood remains relatively upbeat but Mr Hopping cautions that a weaker pound could take its toll on importers – conversely, a weak pound could back domestic production. Housing forecasts may also be affected by interest rates hikes, which at some point will take place. Other products are taking some softwood markets, like composite decking and MDF moulding. Relatively strong European construction markets and the uncertainty surrounding Brexit may also lure skilled labour away from the UK. In short, downside risks outweigh upside ones.

CHINA'S IMPORTED SOFTWOODS MARKET, SHEN WEI (GENERAL-SECRETARY OF WOOD IMPORTERS COMMITTEE OF CHINA TIMBER & WOOD PRODUCTS DISTRIBUTION ASSOCIATION)

Mrs Wei presentation is focused on the Chinese market.

She stresses that since 2014, China began to gradually prohibit natural forests commercial harvesting. Having peaked at 84 million m^3 in 2013, the supply of domestic timber (sawnwood+logs: both softwood and hardwood) in 2016 dropped to 67 million m^3. Imported timber instead, reached 93 million m^3, up from 41 million m^3 in 2006. The 2016 recorded is expected to be broken in 2017 as in the period from January to July imports were 12% higher than in the previous year. There are indications that the share of sawnwood on total timber imported will be higher than the previous year.

Main suppliers of softwood logs to China in 2016 were:

- New Zealand (12 million m^3)
- Russia (9.2 million m^3)
- USA (4.5 million m^3)
- Australia (3.3 million m^3)
- Canada (2.8 million m^3)

Apart from Russia, the supply is consistently growing from all other countries.

Main suppliers of sawn softwood

to China in 2016 were:

- Russia (11.6 million m^3)
- Canada (5.2 million m^3)
- Finland (950,000 m^3)
- Chile (750,000 m^3)
- Sweden (700,000 m^3)

84% of supply was accounted for by the first three countries of the above list. Exports from Russia and Finland are massively increasing, while from Canada they are declining.

The traditional application areas include construction, decoration, plywood, stairs and wood building. The new areas include:

- furniture
- package materials, like box and pallets (having been affected by Chinese natural forest commercial harvesting ban, the package industry began to use imported timbers in recent years. Before, they used domestic poplar, and now they use Russian timbers. But they hope to import low-grade timber.
- Wood flooring. Most of Chinese wood flooring is made of hardwood. Now, there is willingness to introduce softwood flooring into China.

Some interesting developments suggest that there is still a lot of untapped potential in the Chinese market.

First, new timber markets are appearing inland. The China-Europe railway makes it possible for these inland timber markets to import timber at lower prices from Russia and Europe. Second, since 2016, Chinese government released official documents to promote prefabricated buildings in China, which include wood constructions.

Wood will be used in many areas including public buildings, parks, campgrounds, characteristic towns (new, more livable towns that the government intends to build). To promote wood, the China Global Wood Trade Conference was established in 2011, and takes place in September every year in a different city.

Mr Wei concludes her presentation with the following remarks:

- China's timber importation will continue to grow this year and keep importing in large quantity in the following 10 years.
- As wood processing gradually upgrading, China will need all kinds of specifications of timbers, including high quality and high grade.
- Inland regions, such as Wuhan, Chengdu, Chongqing, Guangxi, Ganzhou in Jiangxi Province, Zhengzhou and Xinjiang will be the new timber markets for imported timber.
- Wood buildings will be the largest timber market in future.

JAPAN – MARKET DEVELOPMENTS, MICHAEL NOMURA (SALES MANAGER HOLZINDUSTRIE SCHWEIGHOFER)

Mr Nomura's presentation consists in a comprehensive overview of the Japanese market.

First of all, he notes that the imports of softwood logs, which was 8 million m^3 in 2007, declined after the global economic crisis and never recovered since. In 2016 imported logs amounted to 3.5 million m^3, more than half from the US.

Imports of sawn softwood were 6 million m^3 in 2016, down from 7 million m^3 in 2007. 46% of sawnwood imported was supplied by Europe. Glulam imports were slightly below 1 million m^3 (90% supplied by Europe). Imports of European sawnwood are on pace to hit 2.9 million m^3 in 2017, up from 2.7 million m^3 in 2016 (but down from 2013 peak: 3.2 million m^3), when more than 60% of European lumber was supplied by Sweden and Finland combined. Austria and Romania are also very relevant exporters.

Housing starts might hit 990,000 m^3 in 2017. The Japanese population has peaked and is projected to decline by more than 30 million people by 2050. In spite of this, housing starts are resilient, and the 2017 figure is set to become the highest since 2008. Wooden starts represent more 56% of total starts. These figures are impressive, especially if one considers that from 2008 to 2013 housing starts in Japan were higher than in the US. Of total wooden starts, 75% are traditional post and beam, but the 2X4 segment is on the rise (it reached almost 124,000 units in 2016). Prefabricated starts remain a tiny segment (almost 14,000 units).

Rental units are increasing and made up 43% of total starts. The increase may due to the fact that, in general, millennials are less interested in ownership, population is more mobile, household formation is deferred, and rented homes are more affordable. Overall, younger generations do not have preferences over type of house structures.

A noticeable trend over the last few years is the increase of empty homes. The government is considering tackling this issue by, *inter alia*, promoting renovations or removals and encouraging the owners to demolish. There were 8.2 million vacant homes in 2013, and this figure might rise to 21 million in 2033. The total housing stock across Japan increased by 3,050,000 units to 60,630,000 units in 2013 up 5.3% from 2008.

In the picture, the EOS Member, Mr Nomura (Holzindustrie Schweighofer)

Mr Nomura then dwells on forestry in Japan. Currently, Japan is heavily relying on imports in spite of having theoretically enough forest to be self-sufficient. But artificial/forests have not been taken care well of as they require a lot of maintenance plus there is a shortage of people interested in forestry work. Total plantation area in Japan is tantamount to 41% of total forestry area. A preferred species is Sugi (Japanese cedar), whose processing is heavily subsidized.

Japan has recently passed the Clean Wood Act, a bill for the promotion of the distribution and use of legally logged timber. Operators must endeavor to use legally harvested wood and wood products when they use wood and wood products.

Mr Nomura then makes some final considerations and summarizes his main points:

- People still prefer single family units over multi-family units in Japan
- Factories to include more automated lines as the laboring work force population declines
- Continue to require a high standard of lumber in quality and strength
- More usages of Engineered (stable) wood products such as CLT (also more emphasis on eco-friendly solutions is promoting more usage of wood in buildings)
- Overall, allied with Japanese love of wood, the future for sawnwood consumption seems secure

The Japanese market, however, is rapidly changing and operators need to adapt to seize opportunities. These are the main changes:

- End-consumer preferences
- Demographics changes (decrease in population)
- Household formation changes
- Emerging of power builders
- Rental Housing demands remain strong
- Remodeling market needs
- Expansion of Industrial Non-residence market
- Domestic SUGI production increasing

Finally, Japan is in a delicate area of the world from the geopolitical point of view. For instance, a crisis in North Korea could have an impact on the market.

SOFTWOOD IN CONSTRUCTION TODAY AND IN THE FUTURE – TANJA HAAS-LENSING (BUSINESS DEVELOPMENT HAAS FERTIGBAU)

Mrs Haas-Lensing presentation is the final one of the International Softwood Conference 2017 and it is about the trends of softwood in construction, particularly in Germany. Wood has a 17% share in Germany in the single-family house segment with strong geographical differences (higher share in the Southern *Länder*). Good marketing, increased education, innovative products are all drivers of the increasing market share. The wood building industry was able to position itself as “energy efficient building” and established standards always one step ahead of the actual Energy Performance Building Directives, which, however, raised construction costs.

The wood share is also increasing in the non-residential building segment (similar share of single-family house segment) – on the other hand in the agriculture sector the wood share is declining. The drivers, in addition to those listed above, include also, advantages of prefabricated timber construction regarding digitization (Building Data Modeling), shorter construction times and fixed prices but there are High planning effort and costs, regulations for multi-storey office buildings is unfriendly and the Supply chain in timber construction is not optimized to the standard planning procedures and project organization of larger commercial projects.

In multi-storey buildings the wood share is still very low, at around 2%. There are, though, many opportunities due to the continuing trend towards urbanization which calls for new solutions, a more extensive use of CLT (advantage of prefabrication and minor building time), and the possibility of adding new store to existing buildings. Hybrid constructions

also offer a lot of potential. For instance, reinforced concrete for structure (statics and fire protection) and timber frame for walls and facades (insulation and prefabrication). Modular buildings as well: they are completely prefabricated room cells for standalone solutions or multi-storey buildings.

Mrs Haas-Lensing argues that, in order to tap the potential of timber construction in the future will be required:

- High quality solutions that are competitive (cost-wise) to alternative construction materials
- Connection of industry and science in order to work on (and co-finance) marketing and research and development roadmap as a cluster forest/wood
- Strengthening of political message of sector.

Presentations are available at the following link: http://www.ettf.info/presentations-isc2017

7.2. The 2017 International Hardwood Conference: Globalisation, branding and building for the future. (Official press-release)

Italian hardwood furniture maker Riva has formed a marketing relationship with Lamborghini, branding a new range after the supercar marque and backing it with high-octane promotion (www.riva1920.it)

At the same time, sports stadia architects Populous have incorporated 11 American white oak glulam beams as core structural components of a new stand at the Lord's Cricket Ground in London. At 23m long and four tonnes each, they are thought to be Europe's largest cantilevered engineered timber beams, not to mention a structural application first for white oak.

And in another hardwood twist, the 'Fair and Precious' branding initiative has been launched by the International Tropical Timber Technical Association (ATIBT), underlining the economic, environmental and social value of the tropical sector.

Each of these projects formed a speaker topic at the 2017 International Hardwood Conference, appropriately held in Venice, a city, which CNR Ivalsa researcher Nicola Macchioni explained to the 150-strong, 17-nationality IHC audience, was built on an ingenious foundation system of largely hardwood piles.

With these and other upbeat presentations, the IHC communicated a confident, international hardwood industry that's adapting to market needs.

But the event, organised by Italian trade federation Fedecomlegno in association with the European Timber Trade Federation and European Organisation of Sawmill Industries (EOS), wasn't 100% positivity. It acknowledged too that the sector had obstacles to overcome. Illegal logging and trade remained significant issues and verifying the legality and sustainability of the bona fide industry's products could also prove complex, said speakers. Ensuring raw material supply, given growing worldwide demand, was another challenge.

The consensus was that the hardwood business has exciting opportunities, but operates in an ever faster moving, more competitive market.

Key issues highlighted were globalization and seismic geographical shifts in consumption to emerging markets, notably, although not exclusively, China, or as AHEC Executive Director Mike Snow put it, the '800 pound gorilla in the room'.

In his welcome address Fedecomlegno chairman and CEO of Legnonord Spa Alessandro Calcateterra summarized the sector's position.

"Average per capita wood consumption is still just 0.5%, so there's huge growth capacity," he said. "In fact global roundwood demand is forecast to rise 60% by 2030. This makes it ever more critical to address where timber comes

from, how it's produced (FAO experts forecasts one third will come from plantations by then) and where it should be used."

EOS president Sampsa Auvinen also highlighted industry challenges. In Europe, he said, the hardwood sector had to contend with a stubborn lack of growth despite economic recovery. In fact sawmill numbers in France, Germany and Belgium alone were down 30% in the last decade. This was partly due to industry concentration in the downturn, but there was also the crucial issue of increasing log exports to emerging economies.

"We have great opportunities to capitalize on hardwood's performance characteristics," said Mr Auvinen. "But, while avoiding protectionism, we must insist on a level international timber procurement playing field. Without raw material the European sawmill industry will be forced out of the market."

In his international market overview, analyst Rupert Oliver of Forest Industries Intelligence said latest statistics showed global hardwood trade static at around $35 billion, underlining a continuing and 'disappointing' lack of market value growth since the 2000s.

"Since then global population has increased by 1 billion, with 1.4 billion people taken out of poverty, so you'd expect more growth," he said. "But bar a surge in rosewood trade in 2014, market value has been flat."

However, underlying this outwardly static picture was a dramatic shift in the balance of hardwood market power, both in terms of log and sawnwood consumption, to Asia.

India had been a hardwood log consumer on the rise, but blocks on teak exports from Myanmar and Malaysian supply issues had seen its transition to more lumber buying. But log imports by China, and to a lesser extent Vietnam and other Asian hardwood product manufacturers, continued their inexorable rise. In fact Chinese imports hit 14.3 million metric tonnes in 2015, with 15.4 million tonnes forecast for 2016.

In sawn hardwood, total global temperate trade was worth around $6 billion in 2016 and tropical $4.5 billion, with the US the single leading exporter and Thailand biggest tropical supplier.

China again was the consumer making the headlines with imports this year expected to be nine million tonnes, up from 2016's eight million and including around 1.5 million tonnes from the US alone.

Mr Oliver concluded that the hardwood sector may struggle near term to grow trade volumes, but had opportunities to increase value. Difficulties to overcome included over reliance on a few species, limitations of current environmental controls to halt illegal trade and industry fragmentation, which limited opportunities for concerted promotion and investment, including in plantation development. But positives were revived interest among specifiers in real wood as opposed to substitutes, development of higher specification engineered and modified hardwood products and emergence of more realistic risk-based assurance of legality and sustainability.

"Latest technology can also better evaluate trade data and reduce sustainability certification cost," he said.

Mr Snow's topic was a US hardwood sector in dramatic transformation for the past 10-15 years. The economic and construction crisis of the late 2000s and before that US manufacturing's migration to lower labour cost countries, saw sawn hardwood output slump. It has since recovered, but is still 4.2 billion bd ft below 1999's 12.6 billion peak.

At the same time, reflecting decline in domestic construction and hardwood manufacturing demand, mills have refocused on industrial lumber for the US market and grade exports.

"In 2005 grade lumber accounted for 59.7% of US output, today that's 48%," said Mr Snow. "Moreover, 45% of it is now exported and rising, compared to 17% in 2000."

China's role in this evolution has been central, accounting for all US sawn hardwood export growth since 1992, and today buying 25% of the boards America produces.

US exports to China have grown particularly rapidly since the international economic crisis, thanks to the potent combination of contraction in the American domestic market and the rise of China's new middle class, firing growth in its domestic consumption.

"In 2000 85% of our exports to China were re-exported as finished goods," said Mr Snow. "Today 80% goes into products for its domestic market."

Asked which country will be the 'next China', Mr Snow's response is China thanks to accelerating development of its less industrialised western regions. US mills see this as a further lumber market opportunity, however, their growing concern is the accompanying rise in China's log imports.

"So far logs have gone mainly to finished goods makers processing timber for their requirements," said Mr Snow. "The concern now is emergence of Chinese mills cutting US logs for the general market."

The European market described by ETTF and EOS Presidents Andreas von Möller and Nicolae Tucunel is also a blend of challenge and opportunity. Mr von Moller described the EU's shrinking tropical timber business – with total imports down from 8 million m^3 in 2000 to 2 million m^3 in 2014 – as 'sad'. It was partly due, he said, to the recession, but market misconceptions about its environmental credentials also contributed.

In the picture, the EOS Member, Mr Tucunel.

While renewed effort was needed to halt this trend, however there were overall European hardwood market positives, notably broad economic and construction recovery. While the UK's outlook may look uncertain due to Brexit, most European economies, and importantly their construction industries, were growing. So far this had led only to hardwood market stability since 2013. "But after recession, stability is not a bad thing," said Mr von Möller.

Mr Tucunel reported forecast 2017 total European hardwood production at 10.8 million m^3, imports at 3.4 million, exports 5.7 million and consumption 8.6 million, all roughly on a level with 2016 figures.

Turning to his own country Romania, Mr Tucunel said it remained a leading European hardwood producer, with annual sawn output of 1.7 million m^3. But its private sector mills were increasingly hindered by raw material availability due to a harvest decrease from 19 million m^3 to 17 million m^3, caused in part by "excessive" NGO-driven environmental legislation". "This has led to mills restricting output, even closing," said Mr Tucunel.

Raw material availability and distribution also formed a core theme for Davide Pettenella of Padua University. He addressed whether national and regional timber legality controls were creating a 'dual market' for tropical timber.

His study compared trends in primary tropical timber product imports by EU states, the USA and Australia, representing developed countries with strict timber market legality regulation, and China, Vietnam and India representing emerging consumers with lighter controls.

This highlighted import swings to the latter. In 2001 of all tropical timber imported by these countries, the developed economies accounted for 63% and 72% by volume and value, the emerging countries 37% and 28%. Today the respective division is 44% and 47% and 56% and 53%.

While legality controls may be implicated in this trend, Mr Pettenella said it was not the exclusive factor. "Emerging countries' economic development and increasing south-south trade are also involved," he said. In fact, his conclusion was that the trade trend influencer to monitor was the latter and other intra-regional trade growth. "It's a phenomenon which should be of concern to policy makers," said Mr Pettenella. "In 1990, there were just 20 regional trade agreements. Today there are 283."

Looking at future forest product supply and flows, consultant Pierre Desclos concluded that rising population could also boost intra regional consumption.

"For instance, Africa has 15% of the world's forests, but it's forecast to have a third of its population by 2100, so will be consuming most of its own timber."

He agreed that this will increase pressure on the timber industry to both manage the forest resource more sustainably and use wood to its full potential.

Head of the European Hardwood Innovation Alliance Andreas Kleinschmit von Lengefeld described the role of his organization in this. "Working closely with the industry, we're evaluating the potential outcomes of research into areas ranging from forest management systems, to development of new cellulose fibres, and hardwood in smart buildings," he said.

Mr Venables took the topic further, describing US hardwood innovation now gaining market traction. The massive American white oak glulam beams at the Lords Cricket Ground were one example. Perhaps even more significant was development of tulipwood cross laminated timber for structural application. The material first formed the core structure of two global headline grabbing AHEC showcase projects at the London Design Festival; Endless Stair and The Smile. Subsequently the same material was used in a cancer care centre in northern England, the first permanent building constructed in hardwood CLT.

"Architects and engineers are increasingly convinced of hardwood's structural potential – in fact they're our best ambassadors for it," said Mr Venables, "And global CLT production is set to hit 1 million m^3 next year. Softwood dominates the sector, but imagine if hardwood took just a small percentage!"

Meanwhile Fair & Precious, explained Mr Jobbé-Duval was a potentially powerful new tool to raise awareness and increase marketability of sustainably sourced tropical hardwood. The brand, commits users across the supply chain to verified sustainability and corporate social responsibility goals in procurement.

"The aim is to advance hardwood sustainability by enhancing its market value," said Mr Jobbé-Duval.

Hardwood's other new branding exercise, Riva's collaboration with Lamborghini, centres on beauty and performance.

"It works because we share a passion for quality and design and a commitment to using the finest raw materials," said Maurizio Riva. On another upbeat note, Elvio Florian, Chief Executive of Italian hardwood producer and IHC sponsor Florian Legno, described how through an integrated production line approach, timber companies in developed economies can survive and prosper. Started in 1950, his business now comprises 16 companies, employs 900 people and processes 300,000 m^3 of timber annually.

Presentations are available at the following link:
http://ihc2017.info/en/welcome/

8. European Standardisation – Update

CEN/TC 124 “Timber structures”

Chairperson **: Mr Frédéric Rouger**
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Structure of the technical committee

Reference	Title	Convenor
CEN/TC124/WG 1	Test methods	Christophe Sigrist
CEN/TC124/WG 2	Solid timber	Frédéric Rouger Joint convenor Antony Fewell
CEN/TC124/WG 3	Glued laminated timber	Tobias Wiegand
CEN/TC124/WG 4	Connectors	Barbara Sogato
CEN/TC124/WG 5	Prefabricated wall, floor and roof elements	Simon Aicher
CEN/TC124/WG 6	Wood poles	Willie Clason

Published standards

Reference	Date	Title
EN 14374:2004	2004-11-24	Timber structures - Structural laminated veneer lumber - Requirements
EN 13271:2001/AC:2003	2003-09-24	Timber fasteners - Characteristic load-carrying capacities and slip-moduli for connector joints
EN 12512:2001/A1:2005	2005-09-28	Timber Structures - Test methods - Cyclic testing of joints made with mechanical fasteners
EN 409:2009	2009-04-01	Timber structures - Test methods - Determination of the yield moment of dowel type fasteners
EN 15736:2009	2009-08-19	Timber Structures - Test methods - Withdrawal capacity of punched metal plate fasteners in handling and erection of prefabricated trusses
EN 14229:2010	2010-10-06	Structural timber - Wood poles for overhead lines
EN 26891:1991	1991-02-21	Timber structures - Joints made with mechanical fasteners - General principles for the determination of strength and deformation characteristics (ISO 6891:1983)
EN 14592:2008+A1:2012	2012-05-23	Timber structures - Dowel-type fasteners - Requirements
EN 14545:2008	2008-10-01	Timber structures - Connectors - Requirements
EN 1912:2012	2012-04-18	Structural Timber - Strength classes - Assignment of visual grades and species
EN 14081-3:2012	2012-01-25	Timber structures - Strength graded structural timber with rectangular cross section - Part 3: Machine grading; additional requirements for factory production control
EN 14250:2010	2010-01-27	Timber structures - Product requirements for prefabricated structural members assembled with punched metal plate fasteners
EN ISO 8970:2010	2010-06-15	Timber structures - Testing of joints made with mechanical fasteners - Requirements for wood density (ISO 8970:2010)
EN 16351:2015	2015-10-14	Timber structures - Cross laminated timber - Requirements
EN 15497:2014	2014-04-30	Structural finger jointed solid timber - Performance requirements and minimum production requirements
EN 14080:2013	2013-06-26	Timber structures - Glued laminated timber and glued solid timber - Requirements
EN 336:2013	2013-10-02	Structural timber - Sizes, permitted deviations
EN 16737:2016	2016-05-25	Structural timber - Visual strength grading of tropical hardwood
EN 338:2016	2016-04-06	Structural timber - Strength classes
EN 14358:2016	2016-06-22	Timber structures - Calculation and verification of characteristic values
EN 384:2016	2016-08-31	Structural timber - Determination of characteristic values of mechanical properties and density
EN 1075:2014	2014-12-17	Timber structures - Test methods - Joints made with punched metal plate fasteners

Reference	Date	Title
EN 408:2010+A1:2012	2012-07-25	Timber structures - Structural timber and glued laminated timber - Determination of some physical and mechanical properties
EN 16784:2016	2016-06-29	Timber structures - Test methods - Determination of the long term behaviour of coated and uncoated dowel-type fasteners
EN 14081-2:2010+A1:2012	2012-11-28	Timber structures - Strength graded structural timber with rectangular cross section - Part 2: Machine grading; additional requirements for initial type testing
EN 383:2007	2007-01-10	Timber Structures - Test methods - Determination of embedment strength and foundation values for dowel type fasteners
EN 1382:2016	2016-02-17	Timber Structures - Test methods - Withdrawal capacity of timber fasteners
EN 1383:2016	2016-02-17	Timber structures - Test methods - Pull through resistance of timber fasteners
EN 14081-1:2016	2016-02-10	Timber structures - Strength graded structural timber with rectangular cross section - Part 1: General requirements
EN 1912:2012/AC:2013	2013-08-21	Structural Timber - Strength classes - Assignment of visual grades and species
EN 1381:2016	2016-02-17	Timber structures - Test methods - Load bearing stapled joints
EN 1380:2009	2009-04-01	Timber structures - Test methods - Load bearing nails, screws, dowels and bolts
EN 15737:2009	2009-08-19	Timber Structures - Test methods - Torsional resistance of driving in screws
EN 15228:2009	2009-03-25	Structural timber - Structural timber preservative treated against biological attack
EN 789:2004	2004-10-20	Timber structures - Test methods - Determination of mechanical properties of wood based panels
EN 14251:2003	2003-12-03	Structural round timber - Test methods
EN 912:2011	2011-07-13	Timber fasteners - Specifications for connectors for timbers
EN 12512:2001	2001-11-21	Timber structures - Test methods - Cyclic testing of joints made with mechanical fasteners
EN 595:1995	1995-03-22	Timber structures - Test methods - Test of trusses for the determination of strength and deformation behaviour
EN 594:2011	2011-06-29	Timber structures - Test methods - Racking strength and stiffness of timber frame wall panels
EN 596:1995	1995-03-22	Timber structures - Test methods - Soft body impact test of timber framed walls
EN 380:1993	1993-07-18	Timber structures - Test methods - General principles for static load testing
EN 13271:2001	2001-11-21	Timber fasteners - Characteristic load-carrying capacities and slip-moduli for connector joints

Pending standards

Project	Title	Status	Initial Date	Forecasted voting date
EN 14081-3:2012+A1:2017(WI=00124175)	Timber structures - Strength graded structural timber with rectangular cross section - Part 3: Machine grading; additional requirements for factory production control	Approved	2017-09-19	
EN 14081-3:2012/FprA1(WI=00124166)	Timber structures - Strength graded structural timber with rectangular cross section - Part 3: Machine grading; additional requirements for factory production control	Under Approval	2016-01-13	2017-03-20
EN 384:2016/prA1(WI=00124176)	Structural timber - Determination of characteristic values of mechanical properties and density	Under Enquiry	2017-10-05	2018-12-06
prEN 14081-2(WI=00124156)	Timber structures - Strength graded structural timber with rectangular cross section - Part 2: Machine grading; additional requirements for type testing	Under Approval	2016-01-12	2018-01-04
prEN 14374(WI=00124137)	Timber structures - Laminated veneer lumber (LVL) - Requirements	Under Approval	2015-10-20	2017-04-19
prEN 14592(WI=00124149)	Timber structures - Dowel-type fasteners - Requirements	Under Approval	2015-05-12	2018-04-30
prEN 16351 rev(WI=00124177)	Timber structures - Cross laminated timber - Requirements	Under Drafting	2017-11-14	2019-09-02
prEN 16929(WI=00124160)	Test Methods - Timber flooring systems - Determination of vibration properties	Under Approval	2015-05-12	2016-09-29
prEN ISO 8970(WI=00124165)	Timber structures - Testing of joints made with mechanical fasteners - Requirements for wood density	Under Drafting	2015-10-13	2017-11-28

CEN/TC 175 “Round and Sawn Timber”

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Structure of the technical committee

Reference	Title
CEN/TC 175/WG 1	General matters, definitions, measurement methods
CEN/TC 175/WG 2	Sawn timber
CEN/TC 175/WG 4	Round timber
CEN/TC 175/WG 30	Specific user requirements - Consolidation
CEN/TC 175/WG 32	Specific user requirements - Timber in joinery
CEN/TC 175/WG 33	Specific user requirements - Timber in flooring
CEN/TC 175/WG 34	Specific user requirements - Timber in packaging and pallets
CEN/TC 175/WG 36	Specific user requirements - Other timber products
CEN/TC 175/WG 37	Specific user requirements - Timber in stairs
CEN/TC 175/WG 38	Specific user requirements - Timber in cladding and panelling
CEN/TC 175/WG 39	Specific user requirements - Fire retardant treated wood

Published standards

Reference	Date	Title
EN 1313-2:1998/AC:1999	1999-06-30	Round and sawn timber - Permitted deviations and preferred sizes - Part 2: Hardwood sawn timber
EN 14220:2006	2006-11-08	Timber and wood-based materials in external windows, external door leaves and external doorframes - Requirements and specifications
EN 14221:2006	2006-11-08	Timber and wood-based materials in internal windows, internal door leaves and internal doorframes - Requirements and specifications
EN 13183-2:2002/AC:2003	2003-09-17	Moisture content of a piece of sawn timber - Part 2: Estimation by electrical resistance method
EN 13183-1:2002/AC:2003	2003-09-17	Moisture content of a piece of sawn timber - Part 1: Determination by oven dry method
EN 14342:2013	2013-07-10	Wood flooring and parquet - Characteristics, evaluation of conformity and marking
EN 1927-2:2008/AC:2009	2009-04-01	Qualitative classification of softwood round timber - Part 2: Pines
EN 13556:2003	2003-06-25	Round and sawn timber - Nomenclature of timbers used in Europe
EN 1611-1:1999/A1:2002	2002-08-21	Sawn timber - Appearance grading of softwoods - Part 1: European spruces, firs, pines, Douglas fir and larches
EN 1534:2010	2010-10-27	Wood flooring - Determination of resistance to indentation - Test method
EN 14076:2013	2013-12-11	Timber stairs - Terminology
EN 844-3:1995	1995-03-07	Round and sawn timber - Terminology - Part 3: General terms relating to sawn timber
EN 844-8:1997	1997-03-19	Round and sawn timber - Terminology - Part 8: Terms relating to features of round timber
EN 844-9:1997	1997-03-19	Round and sawn timber - Terminology - Part 9: Terms relating to features of sawn timber
EN 844-12:2000	2000-11-22	Round and sawn timber - Terminology - Part 12: Additional terms and general index
CEN/TS 13307-2:2009	2009-12-02	Laminated and finger jointed timber blanks and semi-finished profiles for non-structural uses - Part 2: Production control
EN 975-1:2009/AC:2010	2010-09-29	Sawn timber - Appearance grading of hardwoods - Part 1: Oak and beech
EN 1309-3:2018	2018-01-24	Round and sawn timber - Methods of measurements - Part 3: Features and biological degradations
EN 13442:2013	2013-03-13	Wood flooring and wood panelling and cladding - Determination of the resistance to chemical agents
EN 16449:2014	2014-03-12	Wood and wood-based products - Calculation of the biogenic carbon content of wood and conversion to carbon dioxide
EN 16485:2014	2014-03-26	Round and sawn timber - Environmental Product Declarations - Product category rules for wood and wood-based products for use in construction

Reference	Date	Title
EN 844-1:1995	1995-03-07	Round and sawn timber - Terminology - Part 1: General terms common to round timber and sawn timber
EN 844-2:1997	1997-03-19	Round and sawn timber - Terminology - Part 2: General terms relating to round timber
EN 844-4:1997	1997-03-19	Round and sawn timber - Terminology - Part 4: Terms relating to moisture content
EN 844-5:1997	1997-03-19	Round and sawn timber - Terminology - Part 5: Terms relating to dimensions of round timber
EN 844-6:1997	1997-03-19	Round and sawn timber - Terminology - Part 6: Terms relating to dimensions of sawn timber
EN 844-7:1997	1997-03-19	Round and sawn timber - Terminology - Part 7: Terms relating to anatomical structure of timber
EN 844-10:1998	1998-04-22	Round and sawn timber - Terminology - Part 10: Terms relating to stain and fungal attack
EN 16481:2014	2014-06-18	Timber stairs - Structural design - Calculation methods
EN 16755:2017	2017-10-11	Durability of reaction to fire performance - Classes of fire-retardant treated wood products in interior and exterior end use applications
EN 975-1:2009	2009-03-18	Sawn timber - Appearance grading of hardwoods - Part 1: Oak and beech
EN 13756:2002	2002-12-11	Wood flooring - Terminology
EN 975-2:2004	2004-07-07	Sawn timber - Appearance grading of hardwoods - Part 2: Poplars
EN 13488:2002	2002-12-18	Wood flooring - Mosaic parquet elements
EN 13990:2004	2004-02-11	Wood flooring - Solid softwood floor boards
EN 13696:2008	2008-12-10	Wood flooring - Test methods to determine elasticity and resistance to wear and impact resistance
EN 15644:2008	2008-12-10	Traditionally designed prefabricated stairs made of solid wood - Specifications and requirements
EN 14298:2017	2017-10-25	Sawn timber - Assessment of drying quality
EN 13489:2017	2017-09-27	Wood-flooring and parquet - Multi-layer parquet elements
EN 1910:2016	2016-04-27	Wood flooring and wood panelling and cladding - Determination of dimensional stability
EN 13227:2017	2017-11-01	Wood flooring - Solid lamparquet products
EN 1313-1:2010	2010-01-27	Round and sawn timber - Permitted deviations and preferred sizes - Part 1: Softwood sawn timber
EN 13226:2009	2009-05-27	Wood flooring - Solid parquet elements with grooves and/or tongues
EN 12246:1999	1999-06-23	Quality classification of timber used in pallets and packaging
EN 12248:1999	1999-06-23	Sawn timber used in industrial packaging - Permitted deviations and preferential sizes
EN 12249:1999	1999-06-23	Sawn timber used in pallets - Permitted deviations and guidelines for dimensions
EN 1315:2010	2010-01-27	Dimensional classification of round timber
EN 1309-2:2006	2006-03-15	Round and sawn timber - Method of measurement of dimensions - Part 2: Round timber - Requirements for measurement and volume calculation rules
EN 13183-2:2002	2002-04-17	Moisture content of a piece of sawn timber - Part 2: Estimation by electrical resistance method
EN 13183-3:2005	2005-03-16	Moisture content of a piece of sawn timber - Part 3: Estimation by capacitance method
EN 1611-1:1999	1999-08-18	Sawn timber - Appearance grading of softwoods - Part 1: European spruces, firs, pines and Douglas firs
EN 14762:2006	2006-02-15	Wood flooring - Sampling procedures for evaluation of conformity
EN 1533:2010	2010-08-04	Wood flooring - Determination of bending strength under static load - Test methods
EN 14761:2006+A1:2008	2008-07-09	Wood flooring - Solid wood parquet - Vertical finger, wide finger and module brick
EN 14519:2005	2005-12-21	Solid softwood panelling and cladding - Machined profiles with tongue and groove
EN 14951:2006	2006-03-15	Solid hardwood panelling and cladding - Machined profiles elements
EN 14915:2013+A1:2017	2017-06-07	Solid wood panelling and cladding - Characteristics, requirements and marking
CEN/TS 15717:2008	2008-04-16	Parquet flooring - General guideline for installation
CEN/TS 12169:2008	2008-01-30	Criteria for the assessment of conformity of a lot of sawn timber
CEN/TS 15679:2007	2007-11-28	Thermal Modified Timber - Definitions and characteristics
EN 1316-2:2012	2012-10-17	Hardwood round timber - Qualitative classification - Part 2: Poplar
EN 1316-1:2012	2012-10-17	Hardwood round timber - Qualitative classification - Part 1: Oak and beech
EN 13629:2012	2012-04-11	Wood flooring - Solid individual and pre-assembled hardwood boards
CEN/TS 14464:2010	2010-07-21	Sawn timber - Method for assessment of case-hardening
EN 1927-2:2008	2008-03-26	Qualitative classification of softwood round timber - Part 2: Pines
EN 13183-1:2002	2002-04-17	Moisture content of a piece of sawn timber - Part 1: Determination by oven dry method
EN 1927-3:2008	2008-03-26	Qualitative classification of softwood round timber - Part 3: Larches and Douglas fir
EN 13647:2011	2011-05-18	Wood flooring and wood panelling and cladding - Determination of geometrical characteristics
CEN/TS 15680:2007	2007-11-28	Prefabricated timber stairs - Mechanical test methods
EN 844-11:1998	1998-04-22	Round and sawn timber - Terminology - Part 11: Terms relating to degrade by insects
EN 942:2007	2007-03-14	Timber in joinery - General requirements

Reference	Date	Title
EN 1438:1998	1998-08-19	Symbols for timber and wood-based products
EN 13307-1:2006	2006-11-08	Timber blanks and semi-finished profiles for non-structural uses - Part 1: Requirements
EN 1309-1:1997	1997-04-23	Round and sawn timber - Method of measurement of dimensions - Part 1: Sawn timber
EN 1313-2:1998	1998-11-18	Round and sawn timber - Permitted deviations and preferred sizes - Part 2: Hardwood sawn timber
EN 15146:2006	2006-12-13	Solid softwood panelling and cladding - Machined profiles without tongue and groove
EN 1927-1:2008	2008-03-26	Qualitative classification of softwood round timber - Part 1: Spruces and firs
EN 13228:2011	2011-05-18	Wood flooring - Solid wood overlay flooring elements including blocks with an interlocking system
CEN/TS 15676:2007	2007-11-21	Wood flooring - Slip resistance - Pendulum test
EN 1312:1997	1997-02-19	Round and sawn timber - Determination of the batch volume of sawn timber

Pending standards

Project	Title	Status	Initial Date	Forecasted voting date
EN 16755:2017/prAC(WI=00175C11)	Durability of reaction to fire performance - Classes of fire-retardant treated wood products in interior and exterior end use applications	Under Drafting	2018-02-02	
EN 17009:2018(WI=00175162)	Flooring of lignified materials other than wood - Characteristics, assessment and verification of constancy of performance and marking	Under Approval	2014-06-19	2017-04-20
FprEN 13756(WI=00175165)	Wood flooring and parquet - Terminology	Under Approval	2014-06-20	2017-10-16
prEN 844(WI=00175157)	Round and sawn timber - Terminology	Under Enquiry	2017-04-28	2018-12-05

EOS organisation 2017/2018

Board members:

- Sampsa Auvinen - CEO, Norvik Timber Industries until 31.5.2018.
  1.6.2018 onwards Director, Bergs Timber (publ) AB ..... President
- Ernest Schilliger - Schilliger Holz (CH) ..... Vice-President for Softwood
- Joël Lefebvre - Groupe Lefebvre (FR) ..... Vice-President for Hardwood
- Constantin Arion - Forestfalt S.A. (RO)
- Carsten Doehring - Ilim Timber Germany (DE)
- Mikael Eliasson - Skogsindustrierna (SE)
- Kai Merivuori - Sahateollisuus ry (FI)
- Thomas Sève - Monnet-Sève SA (FR)
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Honorary Board member:

- Jean-Claude Sève - Monnet-Sève SA (FR)

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EOS Secretariat - Offices

EOS is located, together with CEI-Bois and other European wood associations at Rue Montoyer 24 in Brussels, Belgium. The office building provides opportunities for meetings of national federations too and members are always welcome to use the various facilities when in Brussels.

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ANNUAL REPORT **2017/2018**

The European Organisation of the Sawmill Industry (EOS) aisbl, an international non-profit association according to Belgian law, represents the interests on the European and international level of the sawmill industries from 12 European countries (Austria, Belgium, Croatia, Denmark, Finland, France, Germany, Latvia, Norway, Romania, Sweden and Switzerland), producing about 80% of the total European sawn wood output. The sector represents a turnover of around 37 billion EUR and 16% of the overall woodworking and furniture industry in EU28.

The EOS secretariat extends its thanks to all persons and organisations that have contributed to the publication of this report.

Note: the information provided in Chapter 4 “Main results from the EOS Market Survey April 2018” as well as in the country reports is based on information supplied by the EOS member federations and may differ from the information included in other databases or reports. If the EOS member federations could not provide the required information, the EOS secretariat has used information derived from other sources in order to present the full picture.

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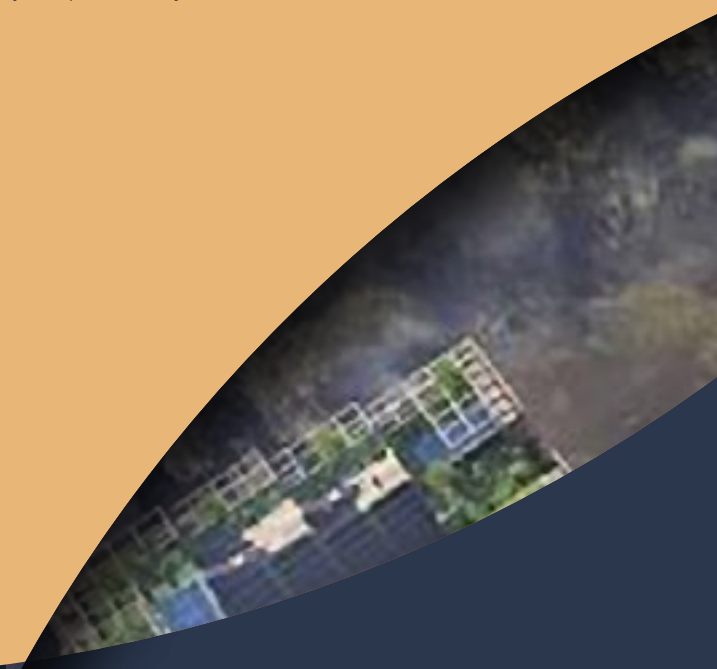
Sky is the limit. Plans drawn up for world's tallest wooden skyscraper in Tokyo. ◄



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