MARKET STATEMENT

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1. General economic trends

1.1. The Federal Government's 2019 annual projection: upswing enters tenth year[1]

The German economy is continuing to grow. The expansion of macroeconomic output this year will mark the tenth successive year of GDP expansion. The solid development in the domestic economy will provide an important basis for this. Employment, incomes, and thus people's potential to consume, are continuing to grow tangibly, as is corporate investment. However, the headwinds are getting stronger, mainly from outside Germany. Also, it is becoming more difficult to keep expanding the production potential. Overall, the underlying cyclical dynamism is likely to slow considerably compared to last year.

At a rate of 1.5 %, the German economy roughly matched the average level of growth seen since 2012, but was much slower than the 2.2 % rate seen in the high-growth years of 2016 and 2017. In the second half of 2018, the economy was seriously affected by temporary national special factors, and particularly by the backlog in the type-approval of passenger cars (due to problems with introduction of new binding rules WLPT "Worldwide harmonized Light Vehicles Test Procedure" since 1 September 2018). In addition, it was hit by the deteriorating global economic environment. On the other hand, positive stimuli derived from the continuing high demand for labour, and also from the low interest rates.

In the current year, the upward domestic forces will continue to prevail. At the beginning of the year in particular, they will be boosted by the cyclical impact on measures contained in the Coalition Agreement.Disposable incomes are expanding sharply because wages and pensions are rising significantly and the state is reducing the burden of taxes and charges on individuals. The domestic economic conditions for 2019 therefore remain good. However, the outlook for the world economy has deteriorated compared with last year; global economic dynamism will be lower.

For 2019, the Federal Government expects, against this backdrop, an annual average increase in gross domestic product of 1.0 % in price-adjusted terms (**table 1**). Economic growth will thus be weaker than it was last year. Nevertheless, demand for labour will remain high. The rise in employment is likely to continue, but to be slower due to the increasing scarcity of labour. It will become increasingly difficult for employers in certain sectors and regions to fill

[1] https://www.bmwi.de/Redaktion/EN/Publikationen/Wirtschaft/2019-annual-economic-report.pdf?__blob=publicationFile&v=6

the vacancies in their companies. This will make it more difficult for companies in the construction and skilled craft sectors in particular to expand their businesses.

Table 1: Selected key figures for macroeconomic trends in the Federal Republic of Germany [1]	**2017**	**2018**	**Annual projection 2019**
	% change on preceding year		
Gross domestic product (GDP) output approach			
GDP real	**2.2**	**1.5**	**1.0**
Total employment	1.4	1.3	1.9
Unemployment rate in % (Federal Employment Agency definition) [2]	5.7	5.2	4.9
GDP by expenditure (real)			
Private consumption expenditure	1.8	1.0	1.3
Machinery and equipment	3.7	4.5	2.3
Construction	2.9	3.0	2.9
Domestic demand	2.0	1.8	1.4
Exports	4.6	2.4	2.7
Imports	4.8	3.4	4.0
External balance of goods and services (contribution to GDP growth) [3]	0.3	- 0.2	- 0.3
Total gross wages and salaries per employee	2.5	3.2	3.1

1) Up to 2018 provisional results of the Federal Statistical Office, National Accounts Status: January 2019
2) In relation to the total labour force
3) Absolute change (stocks/external balance) in per cent of pre-year GDP (= contribution to change in GDP)

The overall economic development will continue to point upwards. The German economy is experiencing only a slight over-utilisation of its production capacity, so that there is no cause to fear an abrupt end to the economic upswing due to the domestic economy. However, growth in the world economy and the eurozone are likely to slow somewhat in 2019. In particular, the risks from the external economic environment have increased substantially.

The Federal Government's annual projection for 2019 is well below the November 2018 forecast by the Council of Economic Experts. The Council had predicted growth of 1.5 % for 2019.The manufacturing sector experienced a clear drop in output at the end of the year. For

this reason, the level of GDP from 2018 was less favourable, and this is also impacting the annualised rate of change for 2019. Furthermore, the cyclical outlook of the global economy has worsened further. This information was not available to the Council when it made its forecast. In contrast, the assessment of the driving forces for growth is relatively similar. Both the annual projection and the Council's forecast expect domestic expenditure, and consumer spending and investment in particular, to generate a lot of growth. The Council's view that the cyclical development in Germany is exposed to much greater risks from the global economy is definitely shared by the Federal Government.

The labour market continues to be an important pillar of the economy. The rise in employment which has been taking place since 2005 will continue this year, although it will not be as strong as in previous years. More jobs will be created in almost all parts of the economy, but primarily in the services sectors. The forecast rise in employment is being made possible not least by immigration from other EU and third countries. The labour participation rate of the domestic population is already very high in Germany compared with other countries, so that the ongoing activation of the hidden reserve is likely to slow in future. The robust state of the labour market is also facilitating the integration of the refugees, which picked up speed in 2018.

1.2 Global upswing losing momentum

The pace of expansion in the world economy is weakening. Following growth of 3.7 % in 2018, it is assumed that global economic growth will amount to around 3.5 % in 2019. A number of indicators show that the global upturn is slowing. Global industrial output was slower last year than the year before. The Markit global purchasing managers' index for industry softened to its lowest level for more than two years in December. Following a further drop, the ifo index on the global economic climate for the fourth quarter of 2018 is actually negative. Global trade in particular lost momentum last year. The advanced maturity of the global upswing is also indicated by the reduction in under-utilisation of capacity and increases in over-utilisation in many regions. For example, according to the OECD's output gap estimate, average capacity utilisation is rising in all the member states, but particularly also in the eurozone and the United States.

Growth slowed last year in the eurozone. All of the larger countries registered softer growth than in the preceding year. The cyclical dynamism is likely to lose a little momentum this year too. This is also suggested by the current indicators. The European Commission's Economic Sentiment Indicator remains at a high level, but has been pointing downwards since the beginning of 2018. The Markit purchasing managers' index for the eurozone also declined last

year, both for the goods-producing industry and for services. Nevertheless, the increase in employment is continuing. Unemployment fell again last year to the lowest level since the financial crisis. Capacity utilisation in industry has also almost returned to the pre-crisis level. The improvement on the labour market and the rising level of capacity utilisation are likely to gradually exert pressure on the price level. The risks to growth in the eurozone continue to include the repercussions of Brexit and some less sustainable budget policies. For 2019, we expect an overall growth rate of 1.5 %.

The economy in the United States accelerated substantially last year, partly due to stimulating effects of an expansionary fiscal policy. This year, the pace of growth is likely to drop to around 2.5 %. The U.S.yield curve is also suggestive of this: its partial inversion in recent months has advanced, expressing less optimistic growth expectations on the part of the market players.Consumer spending has registered stable rates of growth in recent years, and is boosted by very solid developments on the labour market. Also, despite four interest rate rises in 2018, the key interest rates remain low. Pressure on prices is gradually increasing. Last year saw this reflected in a higher rate of inflation.

In the emerging economies in general, economic growth is likely to continue at a similar pace to last year.The development of the Chinese economy will lose further momentum. However, this will be offset by sharper rises in other Asian countries. Despite the clear fall at the end of the year, the average crude oil price rose last year, benefiting Russia, Brazil and other oil-exporting countries. Recent figures show an acceleration in the Brazilian economy, which is likely to grow faster again this year. India's economic output was extremely dynamic last year, and will attain a similar rate of expansion this year. The IMF expects the emerging economies to grow by 4½ % this year, repeating last year's performance.

1.3 The economic situation in Germany in September 2019[2]

The German economy is currently experiencing a slow period. After a good start to 2019 with gross domestic product rising by 0.4% in price-adjusted terms, overall economic output fell by 0.1% in the second quarter. A stronger downturn or even a pronounced recession is currently not to be expected. However, indicators are not suggesting a major change for the better as yet. The export-oriented German industry is continuing to suffer from declining world trade and stagnating global industrial activity. In the second quarter, exports to the European

[2] https://www.bmwi.de/Redaktion/EN/Pressemitteilungen/Wirtschaftliche-Lage/2019/20190913-economic-situation-in-germany-in-september-2019.html

Union and the United Kingdom in particular declined noticeably. The domestic economy will not remain unaffected by this, but has proved to be quite robust so far. Important domestic upward forces are continuing to have an effect, albeit to a somewhat lesser extent. Private and public-sector consumer demand as well as demand for construction services are providing a steady boost to the economy. The uncertainty caused by the trade conflicts and the Brexit process is continuing. However, the global economy is gradually adjusting to the new situation while entrepreneurs are continuing to explore new business opportunities.

The smouldering trade conflicts and the difficult geopolitical environment are continuing to have a dampening effect on the global economy. In June, both global industrial production and world trade reverted back to the downward trend seen since autumn 2018. Although the business sentiment in global industry improved slightly in August, the IHS Markit PMI remains below its growth threshold. The cool ifo global economic climate continued to worsen in the third quarter of 2019. In view of the accumulation of global risks, international organisations are working on the assumption that the development in the global economy will not be very strong, but will still be positive.

Weak global trade is also having an impact on German foreign trade. Although exports of goods and services rose by 1.7 % from June to July (in seasonally and price- adjusted terms) and by 0.7 % in the two-month comparison, they increased from a lower level. According to ifo export expectations, which improved only slightly in August, most companies are still not expecting further growth in exports in the coming months. Imports of goods and services fell by 0.8 % in July, in seasonally adjusted terms and in current prices. In the two-month comparison, they saw a marginal drop of 0.1 %.

While the construction industry is still running at full steam, the period of weakness in industry and the energy sector is continuing. Production in the manufacturing sector was cut back again in July (-0.6 %). While industrial output decreased by 0.8 %, construction output grew by 0.2 %. The two-month comparison showed a noticeable decline of 1.3 % in industrial output and of 5.6 % in energy production. The decline in industrial output was spread broadly across all sectors of the economy. The two-month comparison for the construction industry showed a flat development (-0.2 %). Following the weak start to the third quarter, an industrial recovery is not in sight for the time being. The smouldering international trade conflicts and weak foreign demand have resulted in business expectations being rather down-beat. At present, the volume of new industrial orders is clearly below the average for the previous quarter (-1.7 %).

By contrast, private-sector consumption remains an important pillar of the domestic economy. After a significant increase of 0.8 % in the first quarter, it rose by a further 0.1 % in the second quarter. However, retail sales excluding motor vehicles experienced subdued development at the beginning of the third quarter. In July, they fell by 2.2 % compared with the previous month. New registrations of passenger cars by private owner groups saw more modest growth in the second quarter following the release of pent-up demand in the first quarter, but increased again in July and August. On balance, the business climate in the retail sector remains positive and is significantly better than the long-term average, even though it worsened slightly in August.

The growth in employment continued in the middle of the year, but at a much slower pace due to the economic slowdown. After an average increase in employment of 44,000 persons per month in the last winter semester (in seasonally adjusted terms), the number of jobs increased by only 14,000 from June to July. Compared to the previous year, however, this number still represents an increase of 374,000 persons in unadjusted figures. At a growth of 11,000 jobs (seasonally adjusted), the increase in employment subject to social insurance contributions also weakened further in June. By contrast, unemployment saw a slight increase of 4,000 persons in August, rising to around 2.3 million in unadjusted figures. Underemployment saw a similar development. The leading indicators suggest that the moderate increase in employment will continue while unemployment will rise slightly.

2. Policy measures affecting the forest sector and market drivers

2.1 Creating a regulatory framework for the digital transition[3]

Digitisation brings with it major opportunities for society and opens up enormous potential for additional value creation. The Federal Government is working with businesses, trade unions, the scientific community and civil society to put the conditions in place for successful digitisation. The changes to everyday life, commerce and work caused by digitisation are similar in scale to those resulting from the industrial revolution. They offer great economic opportunities in terms of new market opportunities, sales markets and jobs. They also offer a wide range of opportunities for individuals, with more products to choose from, new ways to communicate, and more flexible working arrangements.

[3] https://www.bmwi.de/Redaktion/EN/Dossier/economic-policy.html

However, the digital transition requires an "ordo-liberal" framework which ensures intact competition, takes greater account of the special features of digital markets, and clearly assigns responsibilities. The ninth amendment to the Act against Restraints on Competition (ARC), which was adopted by the Federal Cabinet on 28 September 2016, is an example of legislation that responds to the advance in digitisation.

The Federal Government wants to ensure coherent regulation and supervision in order to promote digitisation in Germany. The regulatory framework set out by the IT Security Act is to be developed and extended to ensure higher security levels for IT systems. The General Data Protection Regulation has put in place a uniform European legal framework for the processing of personal data. The Federal Government's reform of procurement law has established simple and user-friendly procurement rules.

Europe's ability to compete internationally much depends on the completion of the uniform digital single market. As a general rule, we therefore want to refrain from enacting national regulations unilaterally, thus making it easier for companies to implement their digital business models all over Europe.

Programmes designed to promote the roll-out of high-performance broadband cable, provide funding for other digitisation projects, and to support our Plattform Industrie 4.0 are key to shaping the course of digitisation. A new European digital regulatory policy will have to focus on two goals: first of all, we ought to create a level playing field for investment and innovation, which will generate inclusive growth. Secondly, we must protect people's personal rights and their right to data sovereignty.

2.2 Expanding renewables and boosting energy efficiency[4]

Germany's electricity supply is becoming "greener" every year. The share of renewables in electricity consumption has steadily grown over the last few years – from around 6 % in 2000 to around 36 % in 2017. By 2025, 40-45 % of electricity consumed in Germany is to derive from renewables. This is the aim of the Renewable Energy Sources Act. The following **diagram 1** provides an overview of Germany's electricity mix, i.e. illustrating the share of renewables.

[4] https://www.bmwi.de/Redaktion/EN/Dossier/economic-policy.html

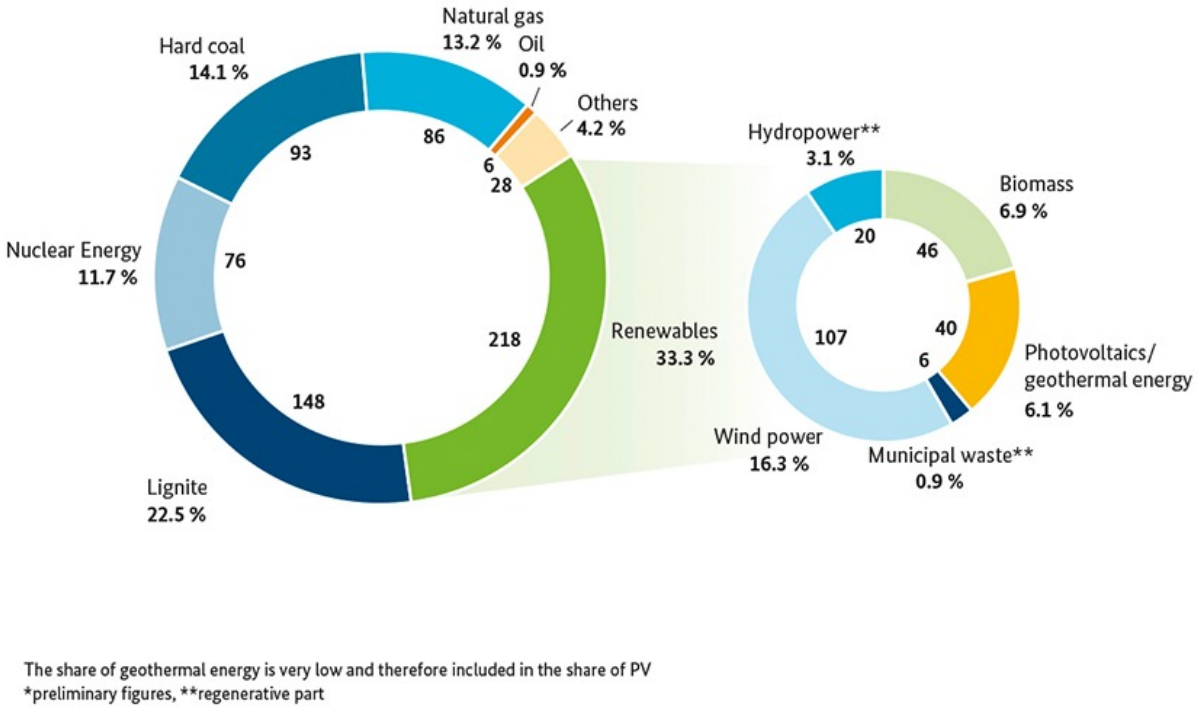


Diagram 1: Gross electricity generation in Germany in 2017 in TWh; preliminary figures incl. some estimates; **regenerative part; last updated: February 2018
© Working Group on Energy Balances

The energy transition is one of the Federal Government's key projects for a secure, environmentally compatible and economically successful future. As a next step in the energy transition, a consistent overall framework is needed to bring together the various fields of action, including energy efficiency, renewables, the electricity market, the grids, and digitisation.

The energy transition is not only making it possible to phase out nuclear power by the end of 2022, but is also helping Germany to attain its climate targets. At the core of the energy transition are energy efficiency and a further increase in renewables capacity. Just like our economy as a whole, the energy transition must be underpinned by the principles of the social market economy. This means that we need to bring together economic success and a highly level of social security. The share of renewables in our electricity supply is to increase to 65% by 2030, which is a major leap. We must ensure that our energy supply remains stable, at a cost that does not harm our businesses' ability to compete or our consumers' ability to buy.

Some smart reforms are needed to further integrate renewables in the electricity market and to make the electricity market 2.0 fit for a growing share of renewables. The Federal Ministry

for Economic Affairs and Energy is putting the conditions in place for a digital infrastructure which will link up more than 1.5 million electricity generators and large consumers.

For the energy transition to be a success, it is necessary to significantly improve energy efficiency. The expansion of renewable energy on its own will not be enough for us to meet the climate targets set out in the decisions from the Paris conference and in the Energy Concept. The goal must be to consume as little energy as possible and to use renewables to cover the remaining needs. The key instrument steering energy efficiency policy in Germany is the National Action Plan on Energy Efficiency (NAPE), which defines the strategic direction of efficiency policy and brings together key measures, programmes and instruments.

2.3 Enhancing energy efficiency in buildings[5]

The construction sector is one of the most resource-intensive industries in Germany. Besides, around 35 % of our total final energy consumption goes on providing the comforts we need in the home, with most of it being used to provide heating and hot water. About 90 % of all utilised mineral resources are used to manufacture construction materials and products. This means that the construction sector accounts for a significant share of the required energy and the CO_2-emissions they cause. Less fossil energy is usually required to manufacture and dispose of construction materials made from wood than materials made from finite mineral resources. Building with wood can therefore make a considerable contribution to reducing CO_2-emissions and, consequently, to climate change mitigation.

More than half of all finished products made from wood (excluding paper) are used in the construction sector. This makes the construction sector the most significant area in which wood products are used. Increased demand has led to wood construction becoming the driving force in wood use – with positive effects on employment and value creation for the entire forestry & wood cluster. As a result, the number of people employed in wood construction has risen by more than 10 % within a period of ten years.

While only 6 per cent of German single-family and two-family houses were built from wood at the beginning of the 1990s, this percentage has tripled to around 20 % in the past 25 years. But the use of wood in multifamily residential construction paints a very different picture. The share here is still only 3 % (**table 2**). In high-rise apartment building construction, wood construction is limited to a few reference buildings and flagship projects. In cities, wood con-

[5] https://www.bmwi.de/Redaktion/EN/Dossier/enhancing-energy-efficiency-in-buildings.html

struction is therefore still clearly under-represented, although the technical and economic advantages of wood as a construction material are obvious when it comes to meeting the growing demand for affordable urban housing. These advantages, especially in urban densification projects, include short building periods, high load capacity in spite of its light weight and flexibility when it comes to adding new storeys or extensions. Alongside new construction, the modernisation and renovation of existing buildings also plays an important role.

Table 2: Timber construction rates in Germany 2018	**(%)**
Single-family and two-family houses	20.3
Multi-family houses	3.2
Non-residential buildings	17.8

Source: Federal Statistical Office and Heinze Marktforschung

Roughly two-thirds of the wood used in the construction sector is used in modernization and renovations, such as to create extra living space or to renovate buildings in a way that increases their energy efficiency. More than 60 % of German residential buildings are older than 35 years and are therefore in greater need of renovation. This is where wood can provide energy-efficient solutions (e.g. energy-efficient insulation)[6].

Where consumption is high, there is a lot of potential for energy savings. There are many benefits of improving energy efficiency and using renewable energy to power the home. These include lower energy costs, greater living comfort, a higher property value and secure provision for retirement, as well as the valuable contribution that is made mitigating climate change. The Federal Ministry for Economic Affairs and Energy will further on support with a range of attractive funding programmes. Since 2000, around five million property-owners have implemented energy-efficiency measures in their buildings while benefiting from government funding. Making homes energy efficient saves a great deal of money in heating costs and allows to enjoy a pleasant indoor climate. The Federal Government wants to make Germany's building stock virtually climate-neutral by 2050. In order to do this, more of our heating needs to be covered by renewables and our buildings made more energy-efficient.

[6] https://www.charta-fuer-holz.de/fileadmin/charta-fuer-holz/dateien/service/mediathek/Web_RZ_FNRC_0094_Charter_for_Wood_180918.pdf

Since 1 July 2017, the Federal Ministry for Economic Affairs and Energy has been providing support for local and district heating systems based on renewable energy. For the first time, funding will be available not just for individual technologies or components, but for innovative overall systems that rely on renewables for at least of 50 % of the heat or cooling energy they deliver. The 4th generation heating systems can help significantly raise the share of renewables, make better use of waste heat, and allows for systems to be operated at lower temperatures compared to traditional heating systems. This helps minimise losses, enhances energy efficiency and promotes the use of renewable energy in local and district heating systems. In a first step, funding will be provided for feasibility studies (for up to 60 % of the cost). At a later stage, there will also be funding for a 4th generation heating networks system (30 - 50 % of the project cost).

Through a combination of energy conservation and the use of renewable energy, the Federal Government aims to cut primary energy demand in the building stock by approx. 80 % by 2050 (compared with 2008). The existing set of instruments is already reaching large numbers of building owners and landlords, and encouraging them to invest in energy conservation in their buildings. In order to meet the ambitious goals set out as part of the energy concept in the buildings sector by 2050, additional investment is needed to make homes more energy efficient and use more renewable energy for heating. To achieve this, the "Energy Efficiency Strategy for Buildings" lays down key principles, such as giving people advice on energy, the continued development of energy conservation legislation, customised renovation roadmaps for individual buildings, the placing of the "CO_2 Building Renovation Programme" on a permanent footing with increased funding (KfW funding programmes for energy-efficient building and renovation) and the further development of the market incentive programme to use renewable energy sources in the heating and cooling market.

2.4 National Forest Strategies

Whereas the National Policy Strategy on Bioeconomy covers the whole range of topics regarding renewable sources, the National Forest Strategy 2020[7] concentrates on forest resources. The National Forest Strategy 2020, developed in an open process by interested stakeholders and adopted by the Federal Cabinet in September 2011, is the latest initiative aimed at evaluating the different demands in an overall context and establishing the underlying condi-

[7] The National Forest Strategy 2020
http://www.bmel.de/SharedDocs/Downloads/EN/Publications/ForestStrategy2020.pdf?__blob=publicationFile

tions that enable forestry and timber management to meet the challenges in a sustainable and, if possible, optimum manner.

The Strategy therefore contains a number of different approaches for possible action in order to specifically define the forest management goals and to identify ways of solving the problems and conflicts thrown up by the wide-ranging, different social interests. The strategy identifies nine main areas of action and related subordinated goals. They range from silvicultural approaches to measures for timber mobilisation, intensification of "cascaded use of wood", increased efficiency of timber use and optimisation of the closed substance cycle to the cultivation of fast growing species outside forests and an increase in timber imports.

By means of an close to nature and environmentally compatible increase in forest productivity, the tapping of additional land potential and the sustainable use of large timber reserves, particularly in small private forests, a major contribution can be made to increasing the stability and vitality of forests and securing the future timber supply. The National Forest Strategy mentions the following approaches as suitable ways of achieving this:

- Creation of diverse, stable and high yield mixed forests
- Risk reduction by avoiding unstable density or excessive stocks as a consequence of consistent forest tending (cleaning, thinning)
- Planting of site-adapted species of trees with a high level of resistance and growth rate
- Forest planting concepts and production periods which lead to optimum yields in harmony with nature conservation and environmental protection requirements
- Use of high quality, site-adapted, resistant and high yield forest plants
- Maintaining the genetic diversity of forest plants.

Research and development represent another key element in the implementation of this strategy. Via the Agency for Renewable Resources, the Federal Ministry of Food and Agriculture provides funding for a large number of projects under the Renewable Resources Funding Programme [8]. These projects are inter alia targeted at increased timber mobilisation and efficient use of wood (tapping additional potential through fast-growing tree species, pilot plant lignocellulose biorefinery etc.).

In order to tackle future challenges of the German forest and timber cluster successfully, preparatory work on a new National Forest Strategy 2050 has just been initiated.

[8] Renewable Resources Funding Programme http://international.fnr.de/index.php?id=152

2.5 German "Charter for Wood 2.0"[9]

The "Wood Charter 2.0", which was published on 26 April 2017, focusses on ensuring of a continuous raw material supply and on factors that will help increase the timber demand, as well as on different aspects of a cycle-driven economy and resource efficiency, in order to mitigate climate change and create additional value. It has become a milestone in the Federal Government's "Climate Action Plan 2050"[10]. With the objectives of mitigating climate change, creating value and utilizing resources efficiently, the German "Charter for Wood 2.0" focuses on qualitative growth in order to support vital international, European and national political objectives. In this context the "Charter for Wood 2.0" further develops and substantiates the German Federal Government's "Forest Strategy 2020".

The following priority fields of action and their central topics provide the framework for specific action and create the basis for further development:

- Using wood in urban and rural construction (increasing the share of wooden buildings in the various building categories, increasing the use of wood in building renovations, curbing prejudice against wood in leading regulations and guidelines, more consideration of the effects on climate change mitigation in strategies, programmes, manuals and guidelines for the construction sector).
- The potential of wood in the bioeconomy (increasing the number of patent registrations, increasing the proportion of hardwood used as a material).
- Material and energy efficiency (increasing raw material yields and reducing the use of materials in the wood sector, reducing energy consumption in the forestry and wood sector, increasing the efficiency/reducing emissions of wood combustion plants).
- Forests and wood as resources (increasing viable forest wood potential in the long-term, safeguarding the long-term availability of softwood, increasing the amount of raw wood harvested in small private forests, increasing the short-term and medium-term potential of wood by tapping unutilized as well as alternative sources of raw materials, ensuring that imported wood products are sourced legally and sustainably).
- The forestry and wood cluster (increasing revenues and value creation in the forestry and wood cluster, safeguarding employment, especially in rural areas).

[9] https://www.charta-fuer-holz.de/

[10] http://www.bmub.bund.de/themen/klima-energie/klimaschutz/klima-klimaschutz-download/artikel/klimaschutzplan-2050/?tx_ttnews%5BbackPid%5D=3915

- Forests and wood in society (expanding the scope of communication with consumers and the information available to them in order to promote awareness of the positive aspects of forest and wood use for society).
- Research and development (increasing investments in research and development by the forestry and wood cluster as well as by public sponsors, maintaining and expanding staff capacities in research, science and teaching).

2.6 The Rovaniemi Action Plan of UNECE/FAO

Green economy, according to UNEP, is a system which results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive. Sustainably managed forests play an essential role in the carbon cycle and provide essential environmental and social values and services beyond their contribution as a source of wood (e.g. biodiversity conservation, protection against erosion, watershed protection and employment in often fragile rural areas). The forest sector has therefore a key role to play in the transition towards a more sustainable economy.

The "Rovaniemi Action Plan for the Forest Sector in a Green Economy" (RAP) was adopted on 13 December 2013 at the joint session of the UNECE Committee on Forests and the Forest Industry (COFFI) and the FAO European Forestry Commission (EFC). It proposes a vision, strategies and objectives for the forest sector in the UNECE region and possible actions towards a green economy. Possible actions could be implemented by international organizations, governments of Member States, the private sector, civil society and other stakeholders. For each action, possible actors were identified by the stakeholder meetings. The Action Plan is meant to inspire voluntary action and provide the basis for plans and activities to focus on the contribution of forests in a green economy. It provides suggestions and is not a work programme for any of the bodies mentioned[11].

Strategies and concepts like this have been initiated in order to tackle future challenges (e.g. climate change, energy savings, exit from nuclear power, balance different interests of society on forests). They offer suitable framework conditions for the access into a green economy at the same time offering opportunities to renewable raw materials and energy as well as to bio-based product composites. Against this backdrop, actions within those strategies may also contribute to the RAP-targets simultaneously. The following selection of actions and projects

[11] https://sustainabledevelopment.un.org/partnership/?p=2584

on national and subnational level may offer a first impression about possible national German contributions to the targets of the Rovaniemi Action Plan (**table 3**).

Table 3: Possible contribution to the targets of the Rovaniemi Action Plan (RAP)	**RAP**
Legality of wood origin (Timber Trade Safeguard Act as of 15 July 2011; Thünen Centre of Competence on the Origin of Timber)	A.0 A.7
Certification sustainable sources of wood and wood products	A.1
Adaption of forests to the ongoing climate change	B.3
Forest protection (e.g. against fires, storms, pests, beetles)	A.3
Maintenance of forest genetical resources, breeding fast growing tree species	A.3
Forest inventories	B.4
Improve harvest techniques including cost reduction	C.3
Greenhouse gas monitoring forests and timber	A.5
Life-cycle-assessment incorporating the whole value-added-chain from forests via timber products to recycling	B.4
Contribution to the development of green building standards	A.6
Cluster and market analyses forest and timber sector	E.0
Wood mobilization; rawmaterial supply timber and paper industry	A.3
Wood-cascading, energy efficiency and avoidance of waste	B.2
Product innovations (e.g. wood-polymer composites, sustainable building movement, lignocellulose biorefinery)	A.4 A.6
Emissions and emission control of harmful substances	B.1
Energetic use of wood including combined heat and power	A.4
Research and development (e.g. http://www.fnr.de/, Wood-Wisdom era net)	A.4
Communication on benefits of forests and timber for society and the environment competitions/awards timber construction (all media)	E.2 E.4

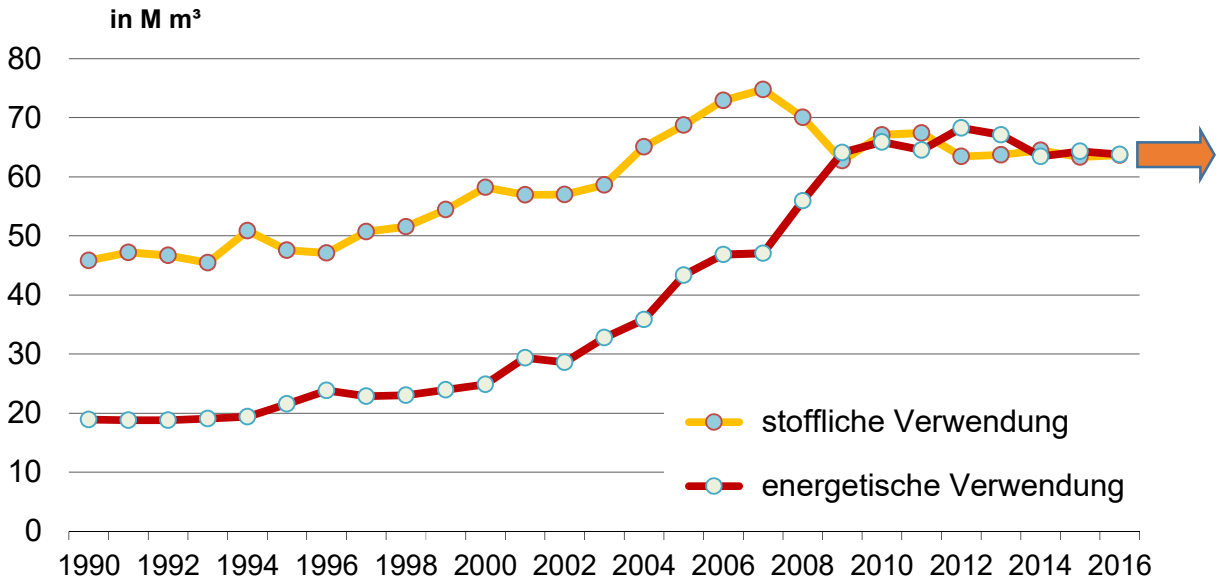
3. Development in forest products sectors

3.1 Timber and roundwood markets

Forests play the key role in timber and fuelwood supply, which has increased significantly during the two decades since 1990. After the boom period 2003 to 2007 and the downturn in the wake of the subsequent financial crisis, the material use of wood is largely stable at around 65 million m³. In recent years the energetic use of wood has been more or less balanced at the same level as the material timber use. The levelling of fuelwood utilization is

mainly attributable to the declining application in private households as a result of warm winter seasons and lower oil prices (**diagram 2**).

Diagram 2: Development of material utilization (yellow line, starting on higher level) and energetic utilization (red line, starting on lower level) of wood in Germany (million m^3)



Source: Mantau U (2018): INFRO Holzrohstoffbilanzen und Stoffströme des Holzes – Entwicklungen in Deutschland 1987 bis 2016. Schlussbericht. Hamburg

In late 2017 and 2018, roundwood production in Germany was strongly affected by windthrow and pests. In spring heavy storms led to significant forest damage. The following drought period during summer and autumn caused additional severe calamities by bark beetle infestation in many regions. The damages mainly affected softwood, especially spruce. It is reported that more than 30 million m^3 of last years fellings are caused by calamities. In 2019 the damage due to drought and bark beetle infestation even increased up to another 70 million m^3 (**table 4**).

A total volume of about 105 million m^3 of damaged timber, accumulated within two consecutive years, have led to continued oversupply, severe market pressure and dropped timber prices. About 180,000 ha forest area has been affected so far in Germany. The damage does not only concern the forest ecosystem, but also threatens the existence of many forest holdings. In order to combat spreading bark beetle disease and to preserve timber quality, the clearing of affected forest areas is most important. But storage sites have already been filled. Forestry companies are reaching limits regarding work force, logistics and financial resources. Another future challenge is the question of reforestation with special focus on climate change aspects

(financing, seedlings, species etc.). Against the backdrop of ongoing climate change it is supposed that in some regions spruce may not be able to maintain as a species as it seems not to be robust enough against storms and drought. Therefore, it is unclear which species will be used for planting in upcoming years.

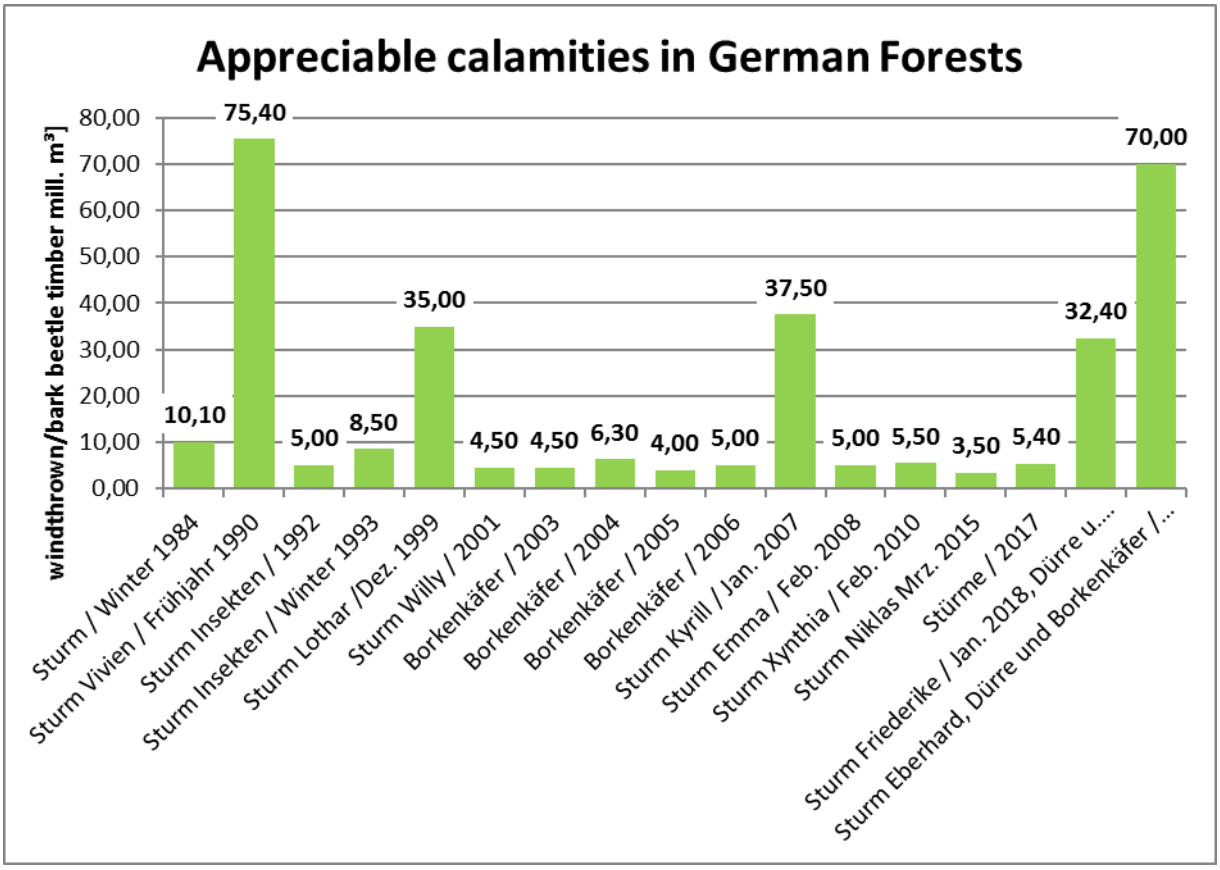


Table 4: Appreciable calamities in German forests (source: BMEL)

The Federal Government has already taken first measures to deal with forest damage during the year 2018. The German Bundestag has decided on an additional 25 million Euros (earmarked) within the 2019 budget of the "German Joint Task for the Improvement of Agricultural Structures and Coastal Protection (GAK)" for a period of 5 years. The government's draft budget for 2020 and the 2023 financial planning foresees doubling the funding for the management of extreme weather events in forests from 5 million to 10 million Euros per year. Additionally, tax reliefs for the year 2018 have been achieved in favor of heavily affected forest enterprises. Furthermore, there are particularly favorable financing conditions for reforestation measures offered by Landwirtschaftliche Rentenbank (Development Agency for Agribusiness and Rural Areas).

As forest damage heavily increased during 2019, these measures will not be sufficient. Hence, the Federal Government will provide further financial resources for necessary measures as part of the national climate package.

What needs happen to deal with the forest damage immediately and in the long term? The following corner stones may provide a basis for further action:

1. Combating bark beetle spread (i.a. evacuation of affected forest areas considering biodiversity aspects)
2. Transportation relief (i.a. temporary increase of permitted total weight for heavy duty vehicles from 40 tonnes up to 44 tonnes and temporary suspension of the driving ban on Sundays and holydays)
3. Acceleration and simplification of approval procedures for wood storage sites (wet and dry storage)
4. Prompt reforestation of damaged forest areas taking into account climate change as well as the need of high-quality seed and planting material (climate resilient mixed stands)
5. Adaptation of the wild population to the requirements of close-to-nature forest management
6. Restoration/maintenance of the infrastructure in the forest (e.g. network of forest roads, fire-fighting ponds, defusing of the situation in areas contaminated with ammunition) and coordination of measures with the nature conservation authorities
7. Support of small private forest owners (e.g. intensify advice on the adaptation of forests to climate change including training)
8. Backup for sufficient and well-trained staff (i.a. reversing staff reductions of the past; rising attraction and expansion of education in forestry science, timber construction and wood technology with practical relevance)
9. Expansion of research and development with special focus on forests, timber and climate protection
10. Intensification/expansion of forest monitoring (i.a. systematic detection of forest damage using new technologies such as remote sensing)
11. Review and adaption of the German Forest Damage Compensation Act (i.a. definition of thresholds for forest crisis, traffic and tax regulations)
12. Strengthening the climate-friendly use of wood originating from sustainable forest management (major project: continued and intensified implementation of the Timber Charter 2.0 measures focusing on i.a. climate protection, cycle-driven economy, raw material and energy efficiency, intensified use of hardwood products)
13. Strengthening cooperation on European and international level in the field of sustainable forest management (other countries are facing similar challenges as Germany)

14: Intensification of public relations in the forest and wood sector (i.a. fact-based information and education about the interrelationships of forest, wood, climate protection and conservation of finite resources)

In addition to the above-mentioned key points and possible measures, an overarching, comprehensive, medium- and long-term strategy for the conservation and sustainable development of the German forest is necessary. To this end, the expiring National Forest Strategy 2020 will be further developed into a Forest Strategy 2050 during this legislative period.

3.2 New method to detect real harvest

According to official harvest statistics, in 2018 about 64.4 million m³ commercial volume under bark were felled (+18.5 % compared with 2017). The increase is caused by large from storm and bark beetle. The species group "spruce" accounted for 61 % of the total felling, "pine" for 19 %, "beech" for 17 % and "oak" for 3 %. Comparing the development of removals in recent years with German Forest Resource Assessment data seems to show that in comparison with potential coniferous wood resources (in particular potential resources of spruce) in hardwood there is still considerable untapped potential. However, the official felling statistics (average of the last decade: about 54 million m^3) are obviously not able tocover the real timber volumes, harvested in and removed from the forest. Especially removals in enterprises managing smaller forest areas (i.a. registration problems) and fuelwood removals are underestimated.

In order to provide more realistic accounts of harvesting volumes an additional methodological approach has been developed in Germany. The method is based on the recalculation of the used amount of roundwood, differentiated into the various users (Jochem et al. 2015)[12]. Databases are official statistics, statistics of industry associations, and results of various empirical studies (e.g. fuelwood consumption in private households).

Also, results from the most recent third Federal Forest Inventory Study 2012 and the Carbon Invenory Study 2017 estimate the average annual harvest in the period 2003 to 2012 and 2013 to 2017 respectively. The third Federal Forest Inventory allows at a ten-year interval the determination of fellings and verifies the derivation on the demand side. The Carbon Inventory is an intermediate inventory conducted in the middle of the obligatory ten year circle of the

12 Jochem D, Weimar H, Bösch M, Mantau U, Dieter M (2015): Estimation of wood removals and fellings in Germany: a calculation approach based on the amount of used roundwood. Eur J Forest Res 134(5):869-888, DOI:10.1007/s10342-015-0896-9

Federal Forest inventory. Results of the statistical data for the most recent years as well as for the period 2003 to 2012 are provided in **table 5**.

Table 5: Comparison between official felling statistics with results of Federal Forest Inventory 2012 and WEHAM-potential (in million m³ of solid wood under bark per year)

Year/ Period	official statistics	Federal Forest Inventory 2012 (Ø 2003-2012)	WEHAM-potential	Carbon Inventory 2017 (Ø 2013-2017)	Thünen Estimation on Roundwood Fellings
2003-2012	56.8	75.7	78.3		73.7
2013	53.2				72.6
2014	54.4		77.7		68.6
2015	55.6				69.8
2016	52.2				67.4
2017	53.5			62.0	67.0
2018	63.6				73.7

Source: BMEL, Thünen-Institute[13,14]

Still, the domestic use of roundwood is dominated by softwood (roughly about three quarters of the used roundwood are coniferous species). The German timber industry is further on based upon softwood processing. Roundwood utilisation accounts for nearly 90 % softwood and only little more than 10 % hardwood species. Predicted growth of global wood demand on the one hand and limited softwood potentials in German forests on the other hand suggest that there will be a major future challenge for the enterprises (e.g. to open up additional import opportunities for softwood; to develop new markets for hardwood products). It is necessary to develop alternative utilisation and supply strategies with specific emphasis on improved raw material efficiency and intensified "cascaded" use of wood. This situation seems to accelerate due to the heavy damage in coniferous forest areas in Germany.

[13] TI-WF (2019): Fellings and Use of Roundwood [online]. Hamburg: Thünen Institute of International Forestry and Forest Economics. Access: www.thuenen.de/en/wf/figures-facts/production-and-use/fellings-and-roundwood-use/

[14] Hennig P, Schnell S, Riedel T (2019) Rohstoffquelle Wald - Holzvorrat auf neuem Rekord. AFZ Wald 74(14):24-27

3.3 Positive development in timber construction

Roundwood markets are closely linked to developments in the construction sector. Regarding wood consumption this industry sector is most important, for in Germany roughly between one half and two third of removals are transformed into products designed for building construction and housing elements. The German construction, housing and property industries form a key sector for growth (turnaround 2019 estimated at about 140 billion Euros) and labor force (about 2.5 million employees). In Germany there are about 18.8 million buildings, of which 80 % are older than 25 years. This means a huge dormant potential to be mobilized. In 2017 the number of new residential building permits has dropped against the previous year (-8,246 units) to 146,012 units. In contrast latest figures for the year 2017 with a 17.7 % share of wooden buildings stand for a new record (2016: 16.2 %). This has been announced by the Germany Timber Federation of Carpenters within the Central German Building Association in their annual report 2018.

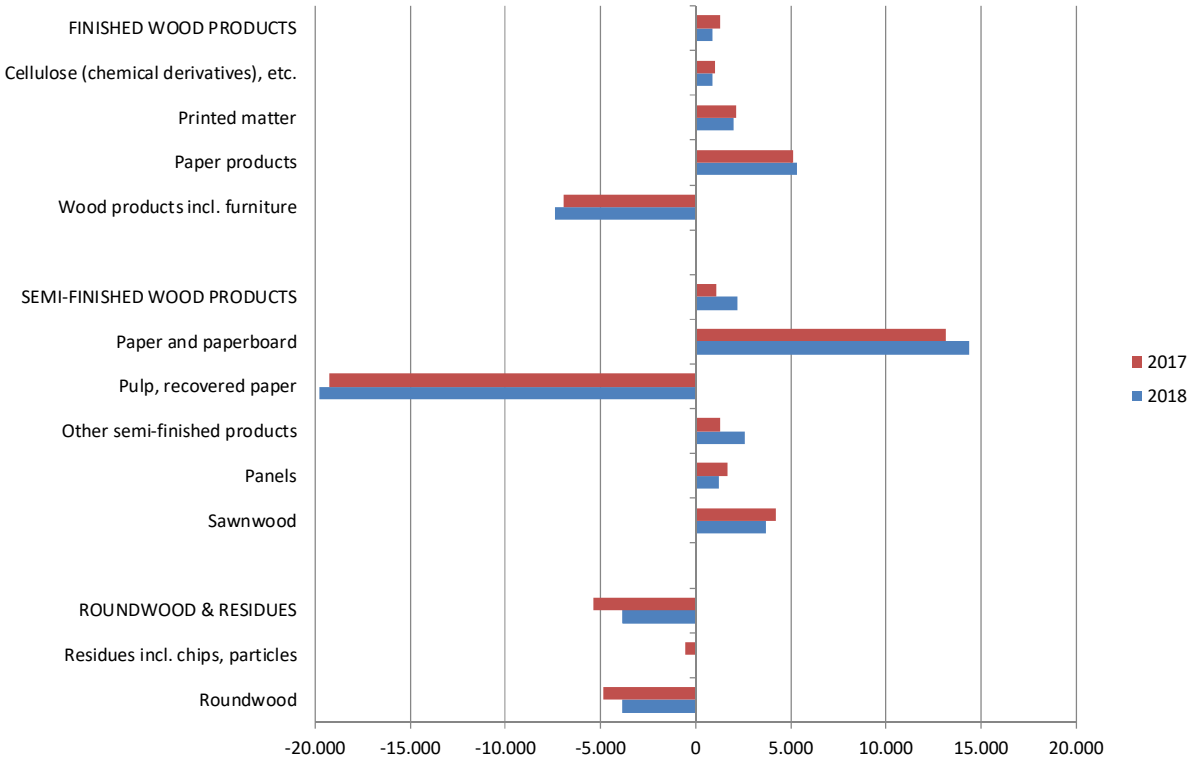
3.4 Trade policy issues - Trade with wood and wood based products

German trade with wood and wood based products still showed a decrease in net imports in the years 2017 and 2018[15], measured in roundwood equivalents ($m^3(r)$): 3.0 million $m^3(r)$ in 2017 and 0.7 million $m^3(r)$ in 2017. In monetary terms, however, net trade shows a surplus in all recent years. Moreover, net exports are slightly increasing: In 2017 net exports of 6.3 billion Euros of wood and wood based products could be achieved. 2018 shows a further increase to 6.7 billion Euros.

The following **figures 1 and 2** show the German trade balance of wood and wood based products of different product groups in the years 2017 and 2018 in 1,000 $m^3(r)$ and in 1,000 million Euros.

[15] Trade data for 2018 are preliminary

Figure 1: Trade balance of product groups of wood and wood based products in the years 2017 and 2018 (in 1,000 m³ (r))

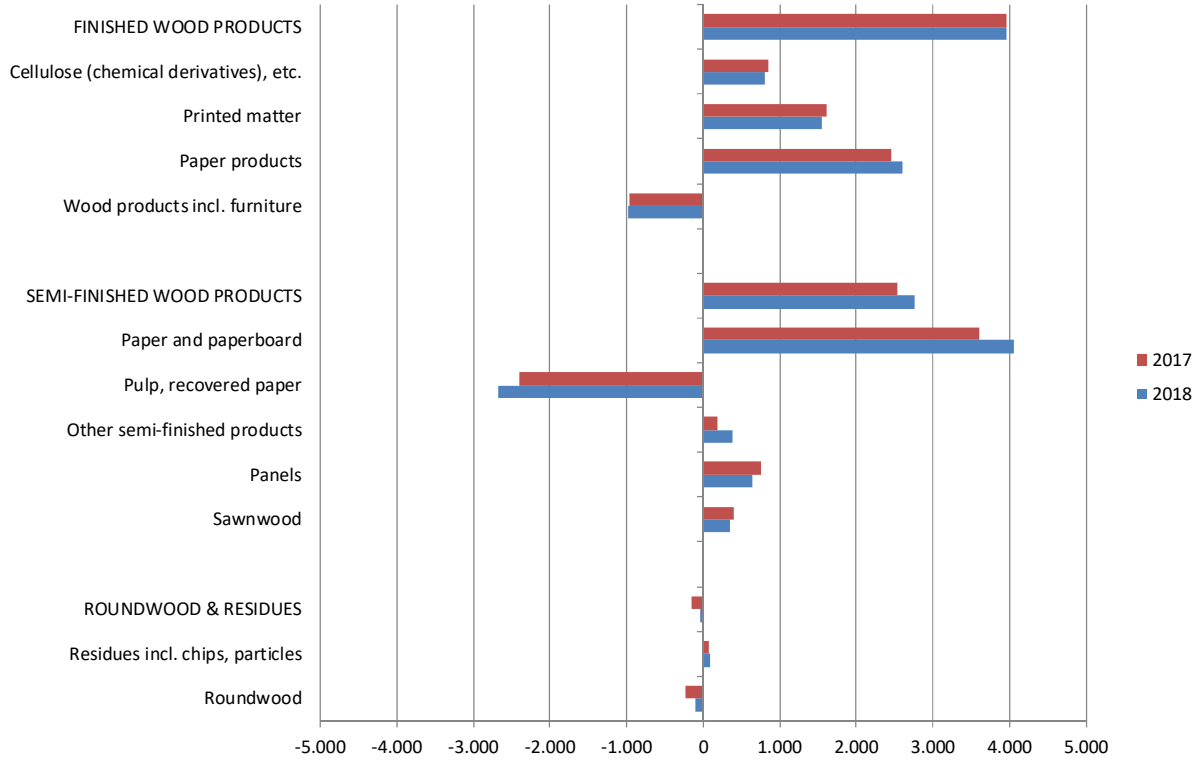


Source: Federal Statistical Office, calculated by Thünen Institute. 2018: Preliminary data

The main product group of roundwood and residues shows net imports in the years considered. Within this main group the products had significantly different trade balances until 2013. While roundwood showed net imports, residues had an export surplus. Since 2013 residues had a net import in quantity. However, data of 2018 shows net exports. Measured in monetary values it shows slight net exports for the last years.

Trade with semi-finished wood products shows a change from net imports to net exports in 2018 (preliminary data) (measured in roundwood equivalent m³(r) compared to previous years. In 2018, this volume further increased to net export of 2.2 million m³(r). However, in monetary values semi-finished wood products show a constant annual export surplus of 2.5 billion Euro in 2017 and 2.8 billion euro in 2018. Within this main product group, pulp and recovered paper show significant net imports, while the export surplus is mainly due to paper and paperboard and to a minor degree to panels and sawnwood.

Figure 2: Trade balance of product groups of wood and wood based products in the years 2015 to 2017 (in million Euros)



Source: Federal Statistical Office, calculated by Thünen Institute. 2018: Preliminary data

The main product group of finished products basically shows net exports in volume and in value. The only exceptions are wood products including furniture which have an import surplus. Paper products, printed matter and chemical derivatives show net exports in both quantity and value.

3.5 Sawnwood (softwood/hardwood)

In 2018, about 17,795 people were employed in the German sawmilling industry (+1.7 % against 2017). The total turnover amounted to 6.4 billion euros (+ 8.0 % against previous the year). With an export quota of 31.7 %, the export turnover amounted to 2.0 billion euros. Compared with 2017, the entire export turnover increased by 15.6 % (companies with 20 and more employed persons)[16].

[16] „16.1 Säge-,Hobel-u.Holzimprägnierwerke“ (StBA-genesis table 42271-0003)

With about 22.6 million m^3, the domestic production of sawn softwood (coniferous) increased by 2.5 % in 2018 compared with 2017. The apparent consumption of coniferous sawnwood slightly increased to 19.5 million m³ (+0.8 % compared with 2017). German exports of sawn softwood amounted to 8.2 million m³ and the imports to 5.1 million m³ in 2018. The annual apparent consumption of sawn hardwood amounted to 0.75 million m³ and shows an increase of 3.7 % compared to 2017. The domestic production increased about 1.4 % and is at a level of 1.1 million m^3 of sawn hardwood.

3.6 Wood-based panels (particle board, fibreboard, MDF, OSB, plywood)

In 2018, the German panel industry employed approximately 14,207 people (+2.9 % against 2017) and recorded a total turnover of nearly 5.0 billion euros. Compared with 2017, the total turnover decreased by 1.3 %. About 36.3 % of the turnover depended on foreign trade (1.8 billion euro). Compared with 2017, the entire export turnover increased by 0.9 % (companies with 20 and more employees)[17]. The annual production of the German panel industry amounted to7.0 million m³ of particle boards (including OSB) (-3.1 %) and to 5.6 million m³ of fiberboards (-2.4 %). The apparent consumption of particle boards (including OSB) was estimated to be 7.5 million m³ (-3.2 % compared with 2017) and of fibreboards to be 3.7 million m³ (+6.5 % compared with 2017).

3.7 Pulp and paper

In 2018, approximately 38,680 people were employed in the German pulp and paper industry (+1.3 % compared with 2017) at about 177 production sites (+1.1 % against 2017). The total turnover increased to 18.2 billion euro (change from previous year: +6.1 %). With an export quota of 58.3 %, the export turnover amounted to 10.6 billion euro. Compared with 2017, the entire export turnover increased by 6.0 % (companies with 20 and more employed persons)[18]. The annual production of paper and paperboard amounted to 22.7 million tons (-1.1 % against 2017)[19]. The apparent consumption of graphic papers, papers and boards for packaging, sanitary and household papers and other papers and board in total was calculated to be 19.9 mil-

[17] „16.21 H.v.Furnier-,Sperrholz-, Holzfaserplatten-und-spanplatten“ (StBA-genesis table 42271-0003)

[18] „17.1 H.v.Holz-u. Zellstoff, Papier,Karton u.Pappe“ (StBA-genesis table 42271-0003)

[19] VDP (2015): Paper 2015: Annual Report. Tab. N8; N16, N18

lion tons (-2.9 % compared with 2017 and according to actual data of the German Pulp and Paper Association). Wood consumption by German pulp and paper mills was estimated to be 9.4 million m³ in 2018, which is a minus of 2.2 % compared with 2017[19].

3.8 Pellet industry and producers of other agglomerates

German producers of wood pellets and other agglomerates still show significant increases in annual production. In 2018 production increased to 2,7 million tons (+11,4 % compared to 2017). About 664,000 tons of pellets and briquettes have been exported in 2018 (+26.6 % compared with 2017), while imports decreased in 2018 to 737,000 tons (-0.7 % compared to 2017). Domestic consumption increased in 2018 to 2.8 million tons (a plus of 5.0 % compared with 2017). Main raw material sources for pellet production are wood residues originating from softwood sawmills. Additional sources only play a minor role (e.g. residues from forests, fast growing species, hardwood species).

3.9 Value added wood products (including furniture)

The German woodworking and furniture industry (manufacturers of assembled parquet floors, of other builders' carpentry and joinery, of wooden containers and of other products of wood and manufacturers of office and shop furniture, of kitchen furniture and of other furniture [20]) employed 153,303 people in 2018 (+2.7 % compared with 2017). 54,414 of these were employed within the woodworking industry, 97,889 in the furniture industry. The total turnover amounted to nearly 29.0 billion euro, an increase of 3.0 % compared with 2017. The increase is mainly due to the woodworking industry (+6.4 %), while the furniture industry only showed an increase of 1.5 %. However, the turnover of the furniture industry is significantly higher (19.0 billion euro in 2018) than turnover of the woodworking industry (9.9 billion euro). With an export quota of 24.5 % the export turnover amounted to 7.1 billion euro in 2018. The export quota of the furniture industry is considerably higher than the export quota of the woodworking industry (31.2 % compared to 11.7 %). The export turnover of the woodworking industry shows an increase compared with 2017 (+4.7 %) while the export turnover of the furniture industry increased by 1.3 %.

[20] In accordance with NACE Codes 16.22, 16.23, 16.24, 16.29, 31.01, 31.02, 31.09

UNECE

TF1

TIMBER FORECAST QUESTIONNAIRE

Roundwood

Country: Germany | Date:

Name of Official responsible for reply:

Official Address (in full):

Telephone:

E-mail:

Note: Complete only if data for 2018 have been revised.

Product Code	Product	Unit	Historical data 2017	Historical data 2018	Revised 2018	Estimate 2019	Forecast 2020
1.2.1.C	SAWLOGS AND VENEER LOGS, CONIFEROUS						
	Removals	1000 m^3 ub	29.600 N	35.152 N		36.000	34.000
	Imports	1000 m^3 ub	4.200 #	4.100 #		4.100	4.100
	Exports	1000 m^3 ub	1.200 #	1.300 #		2.250	2.000
	Apparent consumption	1000 m^3 ub	32.600	37.952		37.850	36.100
1.2.1.NC	SAWLOGS AND VENEER LOGS, NON-CONIFEROUS						
	Removals	1000 m^3 ub	3.155 N	3.551 N		4.000	3.000
	Imports	1000 m^3 ub	150 #	200 #		200	200
	Exports	1000 m^3 ub	850 #	900 #		1.000	950
	Apparent consumption	1000 m^3 ub	2.455	2.851		3.200	2.250
1.2.1.NC.T	of which, tropical logs						
	Imports	1000 m^3 ub	15 #	8 E		8	8
	Exports	1000 m^3 ub	2 #	2 E		2	2
	Net Trade	1000 m^3 ub	13	6		6	6
1.2.2.C	PULPWOOD (ROUND AND SPLIT), CONIFEROUS						
	Removals	1000 m^3 ub	7.633 N	7.957 N		9.000	8.000
	Imports	1000 m^3 ub	2.650 #	4.100 #		4.100	4.100
	Exports	1000 m^3 ub	800 #	1.100 #		2.250	2.000
	Apparent consumption	1000 m^3 ub	9.483	10.957		10.850	10.100
1.2.2.NC	PULPWOOD (ROUND AND SPLIT), NON-CONIFEROUS						
	Removals	1000 m^3 ub	2.866 N	3.195 N		3.500	3.000
	Imports	1000 m^3 ub	200 #	300 #		200	300
	Exports	1000 m^3 ub	300 #	400 #		600	450
	Apparent consumption	1000 m^3 ub	2.766	3.095		3.100	2.850
3	WOOD CHIPS, PARTICLES AND RESIDUES						
	Domestic supply	1000 m^3	14.230 C	14.931 C		15.300	15.300
	Imports	1000 m^3	2.156 C	1.998 C		1.900	2.000
	Exports	1000 m^3	2.558 C	2.613 C		2.600	2.600
	Apparent consumption	1000 m^3	13.829	14.316		14.600	14.700
1.2.3.C	OTHER INDUSTRIAL ROUNDWOOD, CONIFEROUS						
	Removals	1000 m^3 ub	72 N	74 N		75	75
1.2.3.NC	OTHER INDUSTRIAL ROUNDWOOD, NON-CONIFEROUS						
	Removals	1000 m^3 ub	0 N	0 N		1	1
1.1.C	WOOD FUEL, CONIFEROUS						
	Removals	1000 m^3 ub	8.433 N	8.135 N		8.150	8.150
1.1.NC	WOOD FUEL, NON-CONIFEROUS						
	Removals	1000 m^3 ub	13.956 N	13.739 N		13.750	13.750

Please return (preferably by e-mail) to Timber Section no later than 4 October 2019.

By e-mail to stats.timber@un.org.

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UNECE

TF2

TIMBER FORECAST QUESTIONNAIRE

Forest products

Country: Germany | Date:

Name of Official responsible for reply:

Official Address (in full):

Telephone:

E-mail:

Note: Complete only if data for 2018 have been revised.

Product Code	Product	Unit	Historical data 2017	Historical data 2018	Revised 2018	Estimate 2019	Forecast 2020
6.C	SAWNWOOD, CONIFEROUS						
	Production	1000 m^3	22.050	22.610	22.780	23.300	23.300
	Imports	1000 m^3	4.819	5.106	5.340	5.100	5.000
	Exports	1000 m^3	7.538	8.223	8.523	9.000	9.000
	Apparent consumption	1000 m^3	19.332	19.493	19.597	19.400	19.300
6.NC	SAWNWOOD, NON-CONIFEROUS						
	Production	1000 m^3	1.117	1.133	1.057	1.050	1.050
	Imports	1000 m^3	417	388	301	310	310
	Exports	1000 m^3	811	771	726	730	730
	Apparent consumption	1000 m^3	723	750	632	630	630
6.NC.T	of which, tropical sawnwood						
	Production	1000 m^3	0 N	0 N	0	0	0
	Imports	1000 m^3	70	71	71	70	70
	Exports	1000 m^3	40	34	34	35	35
	Apparent consumption	1000 m^3	30	37	37	35	35
7	VENEER SHEETS						
	Production	1000 m^3	89 C	88 C		90	90
	Imports	1000 m^3	117 C	108 C		110	110
	Exports	1000 m^3	64 C	60 C		60	60
	Apparent consumption	1000 m^3	142	136		140	140
7.NC.T	of which, tropical veneer sheets						
	Production	1000 m^3	0 N	0 N		0	0
	Imports	1000 m^3	10	10		10	10
	Exports	1000 m^3	3	3		3	3
	Apparent consumption	1000 m^3	7	7		7	7
8.1	PLYWOOD						
	Production	1000 m^3	100 C	118 C		115	115
	Imports	1000 m^3	1.528 C	1.582 C		1.150	1.150
	Exports	1000 m^3	381 C	390 C		390	390
	Apparent consumption	1000 m^3	1.247	1.309		875	875
8.1.NC.T	of which, tropical plywood						
	Production	1000 m^3	0 N	0 N		0	0
	Imports	1000 m^3	158	157		155	155
	Exports	1000 m^3	43	45		45	45
	Apparent consumption	1000 m^3	115	112		110	110
8.2	PARTICLE BOARD (including OSB)						
	Production	1000 m^3	7.211 N	6.988 N		7.100	7.100
	Imports	1000 m^3	2.938	2.931		2.935	2.940
	Exports	1000 m^3	2.409	2.425		2.435	2.450
	Apparent consumption	1000 m^3	7.740	7.493		7.600	7.590
8.2.1	of which, OSB						
	Production	1000 m^3	1.452 N	1.230 N		1.250	1.250
	Imports	1000 m^3	762	840		840	830
	Exports	1000 m^3	520	512		520	525
	Apparent consumption	1000 m^3	1.694	1.558		1.570	1.555
8.3	FIBREBOARD						
	Production	1000 m^3	5.745 C	5.607 C		5.675	5.750
	Imports	1000 m^3	1.279 C	1.391 C		1.410	1.445
	Exports	1000 m^3	3.570 C	3.319 C		3.330	3.375
	Apparent consumption	1000 m^3	3.454	3.679		3.755	3.820
8.3.1	Hardboard						
	Production	1000 m^3	2.453 N	2.350 N		2.375	2.400
	Imports	1000 m^3	222	224		225	225
	Exports	1000 m^3	1.633	1.502		1.510	1.525
	Apparent consumption	1000 m^3	1.041	1.072		1.090	1.100
8.3.2	MDF/HDF (Medium density/high density)						
	Production	1000 m^3	1.510 N	1.454 N		1.475	1.500
	Imports	1000 m^3	492	509		510	520
	Exports	1000 m^3	1.545	1.558		1.560	1.575
	Apparent consumption	1000 m^3	457	405		425	445
8.3.3	Other fibreboard						
	Production	1000 m^3	1.782 N	1.804 N		1.825	1.850
	Imports	1000 m^3	565	657		675	700
	Exports	1000 m^3	392	259		260	275
	Apparent consumption	1000 m^3	1.956	2.202		2.240	2.275
9	WOOD PULP						
	Production	1000 m.t.	2.432 C	2.398 C	2.398	2.415	2.415
	Imports	1000 m.t.	5.304 C	4.717 C	4.717	4.500	4.500
	Exports	1000 m.t.	1.253 C	1.077 C	1.077	1.170	1.170
	Apparent consumption	1000 m.t.	6.483	6.038	6.038	5.745	5.745
12	PAPER & PAPERBOARD						
	Production	1000 m.t.	22.925 C	22.666 C	22.664	21.985	22.300
	Imports	1000 m.t.	11.836 C	11.611 C	11.166	11.000	11.200
	Exports	1000 m.t.	14.270 C	14.385 C	13.797	13.675	13.700
	Apparent consumption	1000 m.t.	20.491	19.891	20.033	19.310	19.800
5.1	WOOD PELLETS						
	Production	1000 m.t.	2.250	2.415	2.415	2.660	2.750
	Imports	1000 m.t.	432	390	381	400	425
	Exports	1000 m.t.	490	620	638	650	675
	Apparent consumption	1000 m.t.	2.192	2.185	2.158	2.410	2.500

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