

MARKET STATEMENT

**submitted by the
Delegation of Germany
to the**

**76th Session of the
UNECE Committee on Forests and the Forest Industry
5 to 9 November 2018 in Vancouver**

Federal Ministry of Food and Agriculture

Bonn, 2018

1. General economic trends

1.1 A strengthened economy ready to embrace the future ¹

On January 31, the Federal Government adopted the 2018 Annual Economic Report, which is entitled “A strengthened economy ready to embrace the future” and has been released with the following comment: “The German economy is in very good shape. The Federal Government is expecting GDP growth of 2.4 % after adjustment for inflation, which means that the upswing is set to continue. The good news is that the number of persons working in jobs subject to social security contributions rose strongly last year, by more than 700,000. And employees in Germany are benefitting from the economic upswing. Real net wages and salaries per employee have risen by an average of more than 1.6 % per year since 2013. Germany is closely intertwined with its neighbours, which is why our economy will prosper the most when Europe is successful, developing well and reforming itself where this is necessary.”

Table 1: Selected key figures for macroeconomic trends in the Federal Republic of Germany ¹⁾	2016	2017	Annual projection 2018
	% change on preceding year		
Gross domestic product (output approach GDP, real)	1.9	2.2	2.4
Total employment	1.3	1.5	1.1
Unemployment rate in % (Federal Employment Agency definition) ²⁾	6.1	5.7	5.3
GDP by expenditure (real)	2.1	2.0	1.9
Private consumption	2.2	3.5	5.0
Expenditure (Machinery, Equipment, Construction)	2.7	2.6	2.8
Domestic demand	2.4	2.2	2.3
Exports	2.6	4.7	5.3
Imports	3.9	5.2	5.8
External balance of goods and services (contribution to GDP growth) ³⁾	- 0.3	0.2	0.2
Total gross wages and salaries per employee	2.5	2.7	2.9

¹⁾ Up to 2017 provisional results of the Federal Statistical Office, National Accounts
Status: January 2018

²⁾ In relation to the total labor force

³⁾ Absolute change (stocks/external balance) in per cent of pre-year GDP (= contribution to change in GDP)

¹ <https://www.bmwi.de/Redaktion/EN/Pressemitteilungen/2018/20180131-federal-government-adopts-2018-annual-economic-report.html>

According to the Federal Statistical Office, the number of gainfully active people in Germany was approx. 44.3 million last year, which is an all-time high. This year, another 490,000 people are likely to find employment. At 5.7 %, last year's unemployment rate was the lowest since Germany's reunification in 1990.

1.2 The Economic Situation in the Federal Republic of Germany in August 2018²

- Despite external economic uncertainties, the German economy is proving to be robust. The expansion is continuing at a slightly faster rate in the wake of a stimulus from the domestic economy and higher investment activity in the second quarter.
- Output in the goods-producing sector was higher in the second quarter than in the preceding three months. New orders in the manufacturing sector did decline, but the level of orders on the books remains very high. The construction industry is booming.
- Employment, incomes and consumer demand are continuing to trend upwards. Sentiment in the retail sector is good, but expectations have been significantly corrected.
- The level of gainful activity is increasing across much of the economy. Unemployment is trending further downwards. The need to boost structurally weak areas and to cut long-term unemployment continues to present challenges.

The German economy accelerated somewhat in the second quarter. Price-adjusted GDP grew by 0.5 % over the previous quarter. Growth in economic activity in the first quarter has been revised slightly upwards, to 0.4 %. The upswing is therefore continuing. Despite the external economic uncertainties, its rate of expansion is only slightly lower than in 2017. The global increase in uncertainty is affecting demand for German exports and the propensity of domestic companies to invest. However, significant domestic upward forces are continuing to have an impact. Employment, income and private and public-sector consumer demand are rising.

The service economy, which is largely oriented to the domestic market, is going well, as is reflected in the rise in employment. The construction industry is going full steam ahead, and the industrial sector is cautiously expanding its production, despite the current dip in new orders. However, the risks remain high, especially in the external economic environment. This is also reflected in the "ifo business climate index" for the economy in general. Whilst the

² <https://www.bmwi.de/Redaktion/EN/Pressemitteilungen/Wirtschaftliche-Lage/2018/20180713-economic-situation-in-the-federal-republic-of-germany-in-july-2018.html>

assessment of the current situation in the German economy continues to be well above average, business expectations are now only in line with the long-term average.

The upswing in the global economy is likely to have been somewhat slower in the second quarter as well. This is demonstrated by indicators for global trade and industrial production. With differing developments in the emerging markets, the slowdown in the global economy is mainly due to lower growth in the developed economies. The “IHS Markit Global Composite PMI” dropped in July for the third month in succession, and the “ifo index” on the global economic climate deteriorated for the third quarter of 2018. In June, the OECD Composite Leading Indicator for the OECD countries, which is intended to indicate economic turning points, continued its downward trend that began at the end of last year. Nevertheless, according to its latest projection (from May), the OECD expects global GDP to increase by 3.8 % in 2018 and by 3.9 % in 2019.

German exports of goods and services suffered somewhat at the beginning of the year from the less dynamic external economic environment. In June, exports fell slightly, by 0.3 % in seasonally adjusted terms and in current prices. However, following the stagnation in the first quarter, they saw a nominal increase of 1.4 % in the second quarter, although the price-adjusted rise was probably smaller. “ifo” export expectations remain low, as companies await further developments, and do not yet point to a clear pick-up in exports. In contrast, nominal imports of goods and services have been rising since March. In June, they expanded by 0.9 % in seasonally adjusted terms, and by 2.8 % in the second quarter as a whole, increasing more quickly than exports.

In the goods-producing sector, the stagnation in the first quarter was followed by increases in output in the second quarter. Industrial output did drop by 0.9 % in June, but rose by 0.3 % in the second quarter as a whole. Construction output was flat in the first quarter, but expanded very sharply in the second quarter, by 1.6 %. The indicators suggest that the upward trend in the construction sector will continue. New orders in the manufacturing sector followed up on a tangible rise of 2.6 % in May with a sharp fall of 4.0 % in June. The figure for the quarter as a whole was thus a clear drop in orders of 1.6 %. While the number of orders from the non-eurozone rose by 1.0 %, domestic orders and orders from the eurozone fell by 2.0 % and 4.9 % respectively. The manufacturing industry in Germany still has a very good order backlog; as of May, the range was 5.6 months. According to the “ifo” Business Climate Survey, the business climate in the manufacturing sector has continued to deteriorate, but is still well above the long-term average. The trend in industrial activity should therefore continue to point upwards in the coming months, but at a moderate pace.

Private-sector consumer spending has picked up speed again this year following a slowdown in the second half of 2017. The real available incomes of private households rose very clearly in seasonally adjusted terms in the first quarter. The latest figures show a decent rise in wages. In July, collectively agreed wages were 2.4 % higher in year-on-year terms. If one also considers the ongoing good development in employment, consumer spending is likely to remain a key pillar of the economy in the second quarter. Other indicators of consumer spending are also largely positive. Retail sales rose by 0.9 % in the second quarter. The number of new car registrations was up by more than 16 % in year-on-year terms in July. Whilst the “ifo” Business Climate Index shows a decline in expectations in the retail sector in July, the assessment of the current situation stabilised. Consumer sentiment remained at a constantly high level.

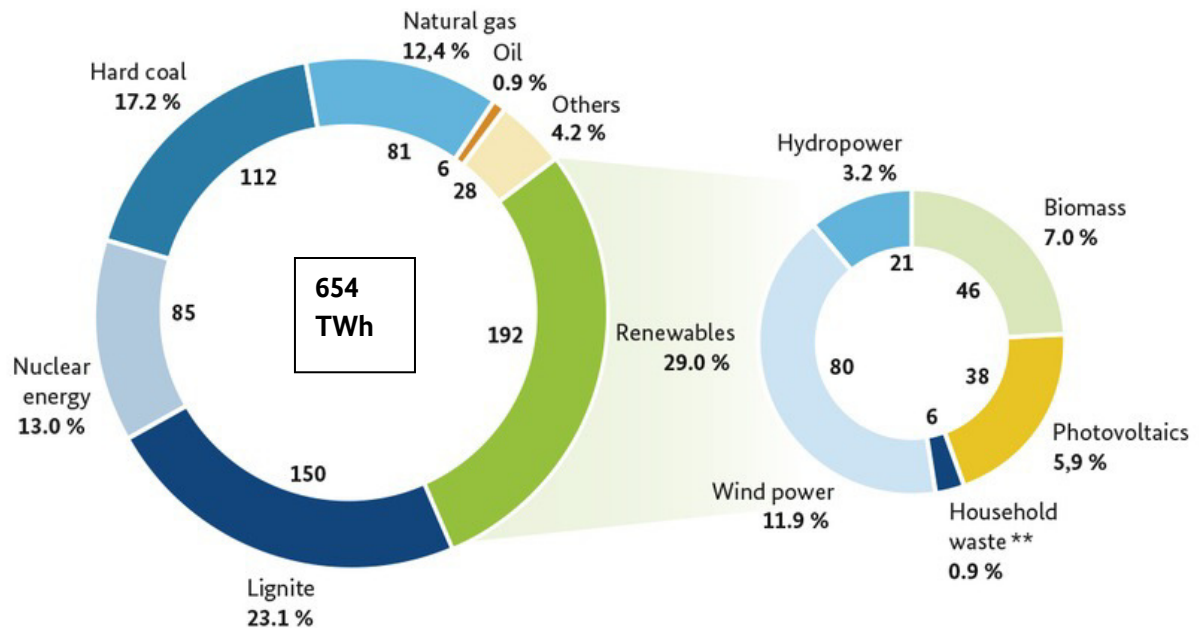
The labour market is continuing to develop favourably. In June, seasonally adjusted employment increased by 28,000 persons; employment growth was 1.3 % for the year as a whole. In May, the rise in jobs subject to social security contributions matched the average rise seen in the preceding four months, at 43,000 people. The leading indicators are pointing to ongoing strong demand from companies for labour, and a further rise in employment. The seasonally adjusted number of unemployed fell slightly in July, by 6,000 persons, and rose slightly to 2.32 million at the beginning of the summer holidays (unadjusted figure). The gradual reduction in unemployment should continue. Tackling long-term unemployment and boosting the economic potential of structurally weak regions remain long-term challenges.

2. Policy measures and market drivers affecting the forest sector

2.1 Developing renewable energy and securing energy supply

The expansion of renewable energy is one of the central pillars in Germany's energy transition. We want to make our electricity supply more climate-friendly and, in light of an increasing scarcity of resources, become less dependent on fossil fuels. Germany's electricity supply is becoming "greener" every year as the contribution made by renewable sources is constantly growing. As **figure 1** demonstrates, renewable energy already covered roughly 29% of gross electricity generation in 2016 (total volume of electricity generated in Germany).

Figure 1: Gross electricity generation in Germany 2016 (terawatt-hours and per cent) *



* Preliminary figures ** Regenerative part

Gross electricity generation in Germany (2016*, status: March 2017)

© Working Group on Energy Balances

The growing significance of renewable energy sources in the power sector is largely due to the Renewable Energy Sources Act (EEG). The EEG has the aim of enabling young technologies such as wind and solar energy to enter the market with support provided by fixed tariffs and a purchase guarantee. Since the adoption of the EEG, the proportion of gross power consumption (total volume of electricity consumed in Germany) accounted for by renewable energy has risen from roughly 6 % in 2000 to 31.7 % in 2016 (according to preliminary data). This means that renewable energies have advanced to become the most important source of energy in Germany's electricity supply.

Germany wants to tap more of its potential to boost electricity generation from solar and wind energy and to substantially expand the use of renewable energy. By the year 2025, 40 to 45 % of electricity consumed in Germany is to derive from renewables. The figure for 2035 is to be 55 to 60 %. Development of renewable energy sources over the last years in Germany is shown in **table 2**.

Table 2: Development of renewable energy sources in Germany		
Share of renewable energy sources (%)	2012	2016
in total primary energy consumption	10,3	12,6
in total final energy consumption	12.6	14.8
in total gross electricity consumption	22.9	31.7
in final energy consumption heating and cooling	9.8	13.4
in total fuel consumption	6,1	5,1

Source: BMWi according to Working Group on Renewable Energy-Statistics (AGEE-Stat)

2.2 Energy sources that drive forward the energy transition

Biomass in solid, liquid and gaseous form is being used for electricity and heat generation and for the production of biofuels. Almost 65 % of the total final energy from renewable sources was generated by the different types of biomass used to this end in 2016. The consumption of wood and wood pellets to generate heat in private households is mainly driven by price movements of fossil energy sources and the particular weather conditions during winter season. As a result the steady increase between 2000 and 2010 from 12 to 32 million m³ per year was followed by a decline to around 27 million m³ in 2014.

Biomass remains the dominant renewable energy source in the heat sector, particularly the use of fuelwood in wood-burning stoves. The use of modern wood pellet combustion systems also continued to increase in 2016 up to nearly 430.000 installations (+ 6.8 % against 2015). As a result, the overall consumption of heat generated from renewable energies rose by 6.3 % to approximately 168 terawatt-hours (2015: 158 terawatt-hours), growing faster than overall heat consumption. The share of renewables in Germany's total final energy consumption for heating and cooling therefore rose to 13.4 % (2015: 13.2 %).

Solar power: In photovoltaic installations (PV), solar panels directly transform sunlight into electricity. Only a few years ago solar power was still one of the most expensive forms of renewable energy. Technological innovation has led to solar installations becoming more effective and much cheaper, and they are now among the most affordable renewable energy technologies. And the development is still ongoing, which means that the cost of these installations will probably fall even further in future. At the end of 2016, more than 1.5 million photovoltaic installations with a total capacity of 41 gigawatts (GW) accounted for the second largest amount of electricity generation capacity in Germany, behind approximately 28,000 wind energy installations (overall capacity of about 50 GW).

Also, further progress was made on the use of heat from the sun, near-surface geothermal energy and ambient heat. In 2015, for example, more than 100,000 solar installations with a combined total of 806,000 square meters of solar collector area were newly installed; the

number of electric heat pumps also grew by a further 57,000 installations, with air-to-air heat pumps accounting for around 70% – far exceeding the number of geothermal systems being used.

Wind energy plays a crucial role in expanding renewables. It now accounts for about 12 % of the German power supply. Apart from expanding wind energy in suitable onshore locations and replacing older, smaller turbines with modern and more powerful ones – known as re-powering – expanding offshore wind energy is playing a growing role. At the end of 2016, Germany's wind power capacity in the grid increased by around 5,443 megawatts (MW) within one year. The Federal Government is aiming to bring this figure up to 15,000 MW by 2030.

2.3 Making the right choices

The 2014 revision of the EEG was an important further step towards setting the energy transition on a path to success. It thus built a platform for the expansion of renewables in the electricity sector, enabling them to emerge from being a niche to become the mainstay of Germany's power supply. The German government's 2014 EEG aimed not least to ensure the ongoing expansion of renewable energy by defining deployment corridors for each of the various technologies.

Also, the 2014 EEG stated that the rates of remuneration should be determined via competitive auctions from 2017 at the latest. To this end, pilot auctions have successfully been held for ground-mounted photovoltaic installations since 2015. These have proved their worth, generating competition and leading to falling costs. A total of six pilot auctions were held for large ground-mounted PV installations. The average amount of the award dropped from 9.17 cent per kilowatt-hour (kWh) in April 2015 to 6.90 cent per kWh in December 2016. Following the successful trials, the auctions are now to be extended to cover other technologies, and particularly wind energy, under the new 2017 EEG, which was adopted on 8 July 2016 and entered into force on 1 January 2017 (only exemption is for installations with an output of below 750 kilowatts).

Hence, the revisions of the Renewable Energy Sources Act EEG

- stipulated a binding expansion corridor
- sharply reduced the costs via concentration on the cheap technologies of wind power and photovoltaics,
- claimed that new large-scale installations are responsible for marketing the electricity they generate (better integration into the electricity market) and
- halted the rapid rise in electricity prices.

A major instrument for heating/cooling is also the Renewable Energies Heat Act (EE-WaermeG), the funding details of which are fleshed out in the Market Incentive Programme (MAP). Finally, the use of renewable energy in the transport sector is largely determined by

the Biofuel Quota Act. When it comes to the use of electricity in transport, mention should also be made of the Electric Mobility Strategy and, from 2016, the purchase premium for electric vehicles.

2.4 On the way to a “green economy”

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.

2.5 The Rovaniemi Action Plan of UNECE and FAO

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 mentioned³.

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 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**).

³ <https://sustainabledevelopment.un.org/partnership/?p=2584>

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

2.6 The National Policy Strategy on Bioeconomy ⁴

The concept of bioeconomy takes natural cycles of materials as its point of orientation. It encompasses all sectors of the economy that produce, work and process, use and trade with renewable resources. This includes raw materials produced in the agricultural, forestry and fisheries sectors, as well as in aquaculture or in microbial production. Increasingly, biogenic waste materials and residual materials are also taken into consideration. The bioeconomy is thus also resource-efficient recycling. Renewable resources are worked and processed to form a variety of products, also by means of industrial application of biotechnological and microbiological processes. Additionally, the use of sustainably produced biomass also acts as a significant renewable source of energy - with preference given to incinerate at the end of the cascading processes of material utilization. The Policy Strategy on Bioeconomy builds upon the

⁴ The National Policy Strategy on Bioeconomy
http://www.bmel.de/SharedDocs/Downloads/EN/Publications/NatPolicyStrategyBioeconomy.pdf?__blob=publicationFile

Federal Government's Sustainability Strategy. This dovetails with the "National Research Strategy Bioeconomy 2030 – our route towards a biobased economy", adopted in 2010, providing the foundation for innovations in the bioeconomy by means of research and development.

2.7 The National Forest Strategy 2020⁵

Whereas the National Policy Strategy on Bioeconomy covers the whole range of topics regarding renewable sources, the National Forest Strategy 2020 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 conditions 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 9 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

⁵ The National Forest Strategy 2020

http://www.bmel.de/SharedDocs/Downloads/EN/Publications/ForestStrategy2020.pdf?__blob=publicationFile

provides funding for a large number of projects under the Renewable Resources Funding Programme⁶. 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 ligno-cellulose biorefinery etc.).

The National Forest Strategy 2020 should, furthermore, be in harmony with the Federal Government's other strategies such as the National Sustainability Strategy, the National Biodiversity Strategy, the Biomass Action Plan and measures to mitigate climate change. Attempts to improve the efficiency of raw material utilisation and to reduce energy consumption in the timber sector also constitute core activities in the Federal Government's Action Plan for the Industrial Use of Renewable Resources⁷ that are also currently being put into practice.

2.8 German “Charter for Wood 2.0”⁸

The objective of the 2004 “Wood-Charter” was to increase average timber utilization per inhabitant by 20 % within ten years. This goal was set in light of unsatisfactory demand in the various fields of wood use. The goal of this meanwhile terminated first national “Wood-Charter” was in fact achieved before the set period was over. Moreover, the German forest and timber cluster (table was able to overcome the market slumps resulting from the financial and economic crisis of 2007.

Table 4 German Forest- and Timber Cluster (2016)	Turnaround (bio €)	Gross value added (bio. €)	Enterprises	Employees
Forestry	6.001	3.415	33596	93096
Semi-finished Products	12.496	2.283	3170	43756
Finished Products	36.510	11.177	22785	226365
Timber Construction	21.178	7.914	40279	235067
Paperindustry	43.047	11.115	2163	131241
Publishing/Printing	54.134	20.379	18551	336513
Timber trade	9.023	1.318	2447	17084
Total	182.389	57.602	122991	1083122

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

⁶ Renewable Resources Funding Programme <http://international.fnr.de/index.php?id=152>

⁷ Action Plan for the Industrial Use of Renewable Resources http://www.bmelv.de/SharedDocs/Downloads/Broschueren/AktionsplanNaWaRo.pdf?__blob=publicationFile

⁸ <https://www.charta-fuer-holz.de/>

Government's "Climate Action Plan 2050"⁹. 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).
- 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).

2.9 Forest Climate Fund ¹⁰

The Forest Climate Fund is part of the programme associated with the Energy and Climate Fund. A decision by the German Bundestag called for it to be established from 2013 under the

⁹ http://www.bmub.bund.de/themen/klima-energie/klimaschutz/klima-klimaschutz-download/artikel/klimaschutzplan-2050/?tx_ttnews%5BbackPid%5D=3915

¹⁰ Forest Climate Fund
<http://www.bmel.de/EN/Forests-Fisheries/Forests/Texte/ForestClimateFund.html>

joint responsibility of the Federal Ministries of Agriculture (BMEL) and the Environment (BMUB).

Due to carbon storage, build-up of carbon stocks in forests and the prevention of greenhouse gas emissions as a result of an enhanced use of timber, recycling and energy recovery, German forestry and forest industries are playing an important role in combating climate change. Bearing in mind the productive, protective and recreational functions of forests, the Forest Climate Fund is intended to maintain and increase this positive impact on the climate.

Adapting our forests to climate change is a precondition for achieving this aim. Given that forests stretch across very large areas and due to their great vulnerability to climate changes and their long life cycles and production periods, we need to take swift and sustainable adaptation measures immediately. BMEL and BMUB therefore regard it as a necessity to promote measures aimed at tapping the potential of forests and timber for CO₂ reduction as well as measures aimed at adapting German forests to climate change, and in this way to help the Federal Government achieve its climate goals.

The measures are designed to achieve the greatest possible benefit in terms of protecting the climate and adapting forests to the consequences of climate change, while taking both ecological and economical aspects into consideration. Wherever possible, the intention is to harness synergies between climate protection, the preservation of biodiversity and the adaptation of forests to climate change. Measures are to be funded in the following priority areas:

- Adaptation of forests to climate change,
- Safeguarding of carbon storage and increasing the CO₂ sequestration of forests,
- Increase of storage in and reduction/substitution of CO₂ via wood products,
- Research and monitoring,
- Information and communication.

3. Underlying conditions for the forest product markets sector

Globalization means that there are challenges and opportunities that are not limited to within national borders. The demand for natural resources will increase on a global scale and it is of growing interest to use these resources responsibly. While ensuring food supply as well as a supply of raw materials and energy for a growing world population it is necessary to face additional global challenges, such as the mitigation of climate change and the preservation of biological diversity and the natural environment. Industrial and other uses of renewable and sustainably used resources are important contributions to protecting the climate and the environment, to saving fossil fuel reserves and to sustaining rural areas. In view of finite fossil resources, sustainable forest management plays an important role to securing future needs.

3.1 Sustainable and legal wood-trading policies

An important initiative at EU level is the EU-FLEGT (Forest Law Enforcement, Governance and Trade) Action Plan on Illegal Logging. The Federal Government is backing preparations and negotiations with interested countries of voluntary FLEGT partnership agreements (VPA) with the EU.

The EU-FLEGT approach is supplemented by the “European Timber Regulation” (EUTR). The regulation prohibits the placing of illegal timber on the common market and commits operators who place timber and wood-based products on the market to furnishing proof of legality by applying due diligence systems. The regulation is effective since 3 March 2013 and about 600 controls of operators have been conducted in Germany until the end of last year.

This year a further number of about 200 controls is expected. The [“Thünen Centre of Competence on the Origin of Timber”](https://www.thuenen.de/en/infrastructure/the-thuenen-centre-of-competence-on-the-origin-of-timber/)¹¹, which has been founded 2013, offers services for authorities, timber trade, associations and consumers. The number of requests, especially in the field of identification of tree species that have been used for the production of timber products, has strongly increased there, particularly from foreign authorities and wood trading companies (**figure 2**). The “Thünen Centre of Competence on the Origin of Timber” has been strengthened further in 2016 so that it will be able to cope with the still strongly increasing demand for its services.

¹¹ <https://www.thuenen.de/en/infrastructure/the-thuenen-centre-of-competence-on-the-origin-of-timber/>

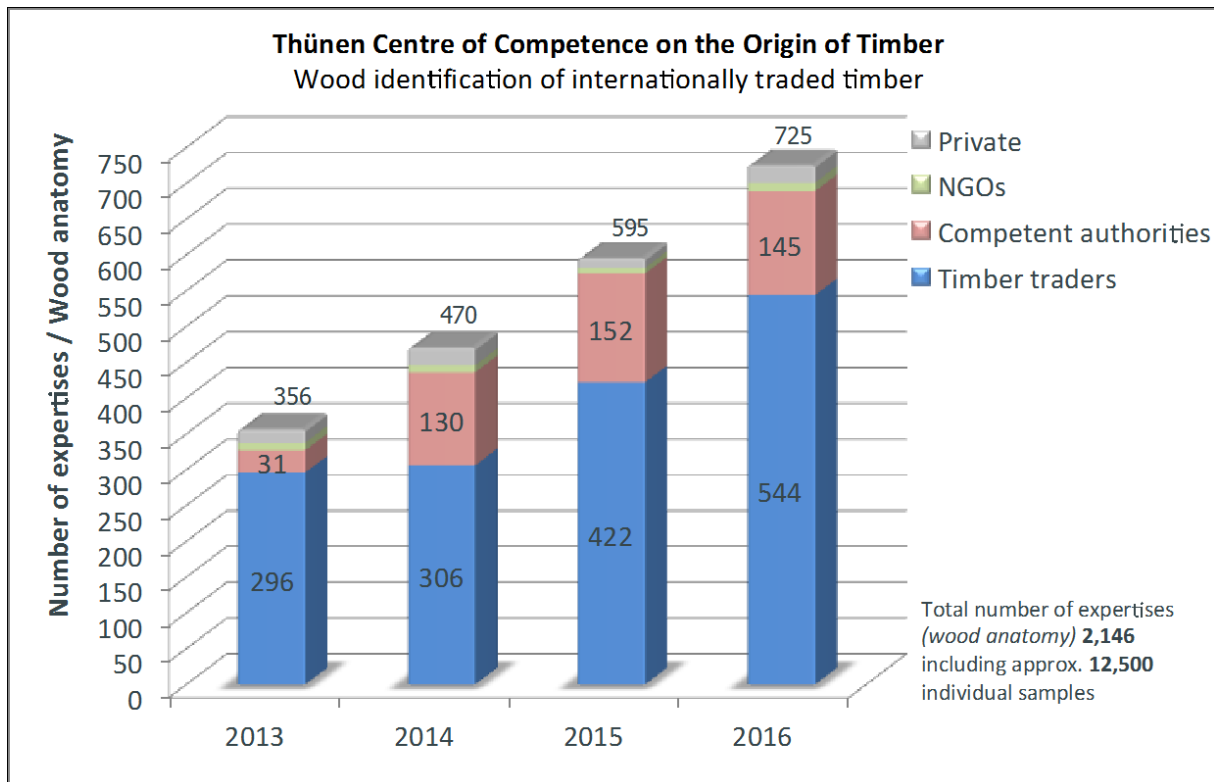


Figure 2: Development of number of surveys at the Thünen Centre of Competence on the Origin of Timber

Also at international level Germany is especially engaged in work on improved methods for timber species and origin identification. Based on international projects with ITTO and Biodiversity International a global partnership was founded at the World Forestry Conference in Durban in September 2015. Founding members are, besides Germany, Australia, the EU Commission and the USA with the World Resources Institute. The mission of the partnership is to connect scientific and technological experts, and catalyze information and progress on wood and wood fiber identification in order to use these innovative methods more widely in tracking timber and fiber supply chains and preventing illegal logging and associated trade. At the core of the global partnership is the project Global Timber Traffic Network phase 2 (GTTN 2)¹², which is financed by Germany and conducted by the European Forest Institute (EFI). Interested institutes and organizations are invited to engage with this initiative.

3.2 Wood demand and raw material potential

According to the results of the third National Forest Inventory¹³ (covering the years 2002 to 2012) Germany has about 11.4 million hectares of forests (32 % of territory) which have been

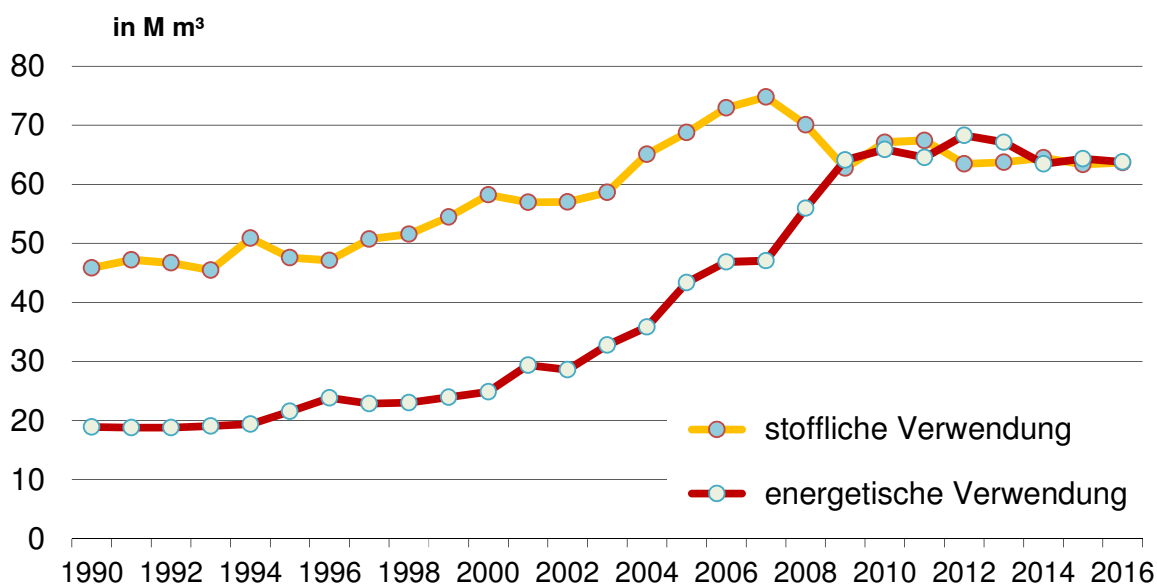
¹² <https://globaltimbertrackingnetwork.org/>

¹³ http://www.bmel.de/SharedDocs/Downloads/EN/Publications/ForestsInGermany-BWI.pdf?__blob=publicationFile

sustainably managed for about 300 years now. The fact that increment (average of about 11.2 m³/ha * year) has been higher than the amount of removals has again led to the creation of substantial timber stocks (3.7 billion m³; average about 336 m³/ha). In comparison with the results of the second Forest Inventory this means + 7 % within 10 years in spite of intensive wood utilization.

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 (**figure 3**).

Figure 3: Development of material utilization (yellow line, starting on higher level) and energetic utilization (red line, starting on lower level) of wood in Germany (million m³)



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

3.3 Manifold advantages of multifunctional forests and sustainable timber

Renewables like timber and woody biomass offer significant opportunities to mitigate the effects of the ongoing climate change, secure raw material supply and promote economic development. CO₂ is sequestered not only while trees grow, but also stored as carbon in timber

products. Every cubic meter of timber is the result of nearly 1 ton CO₂-sequestration (from the atmosphere) and storage in trees in the form of different carbon compounds - in some cases over many decades after tree harvest (e.g. timber building construction).

In Germany the build-up of carbon stocks in forests and the prevention of emissions as a result of an enhanced use of sustainably managed timber, recycling and energy recovery currently prevent the release of about 127 million tons of CO₂ per year into the atmosphere (i.e. avoidance of about 14 % of national greenhouse gas emissions). Hence, responsibly managed forests and sustainable material use of timber is favorable regarding climate protection and energy saving. Its carbon balance is mostly superior to those of competing raw materials. In addition, it helps to reduce energy consumption and to replace fossil fuels at the end of the life cycle. Finally, the whole wood product chain serves to boost domestic value creation, especially in rural areas. Against this backdrop renewables are becoming increasingly important in a society geared towards sustainable development.

As a multi-purpose raw material, the demand for woody biomass has increased greatly, with it being put to several major uses. Due to its many different utilization possibilities it has the potential to successfully break into new markets. Against the backdrop of economic growth scenarios and due to the ongoing ambitions to achieve the given climate protection targets 2020 and beyond (“bio-based economy”), some studies expect a shortage in timber supply in the medium and longer term^{14 15}. Depending on the degree of mobilization of existing biomass stocks, worst-case scenarios are indicating supply deficits. However, these estimated supply “gaps” must be considered as theoretical figures because in real terms, markets as well as enterprises will react to an ongoing shortfall of timber and woody biomass in due time. Besides price movements, such developments may cause suitable reactions on the markets, such as reduction of production capacities, shutdown of facilities or relocation of investments to more favorable raw material supply regions.

One key to preventing such developments from coming true is to mobilize existing timber and woody biomass stock not only in forests but also to tap additional raw material sources outside forests (e.g. re-use of residues and recovered wood, fast growing species on arable land, landscape care wood). Policy efforts are aimed at tapping such additional potentials of forest timber. However, the prospects of success are uncertain and the subject of intensified political discussion. They are largely determined by market development as well as by the underlying economic and political conditions.

¹⁴ Mantau, U. et al. 2010: EUwood - Real potential for changes in growth and use of EU forests. Final report. Hamburg/Germany, June 2010. 160 p.

¹⁵ The European Forest Sector Outlook Study EFSOS II
http://www.unece.org/fileadmin/DAM/timber/efsos/data/Country_profiles.pdf

3.4 Competing requirements of society as a challenge for multifunctional forestry

Following moderate growth in the 1990s, the use of timber as a raw material and fuel in Germany has risen substantially since the turn of the millennium. The use of wood resources has been based on domestic availabilities, especially those of forest resources. Further growth in demand is expected due to the economic development in general and the political environment for the promotion of resource efficiency, energy efficiency, cycle-driven economy and bioeconomy.

Fuelwood demand of private households has intensified raw material competition, especially in respect of the availability of softwood. During the last years market pressure weakened, because mild winter seasons and lower prices for fossil energies reduced fuelwood demand from 32 million m³ (2010) to 27.6 million m³ in 2014¹⁶. Against the background of a growing demand for timber, the safeguard of wood supply remains a challenge. In general, the annual timber harvest in German forests is still below increment. There is space for mobilizing additional domestic forest resources e.g. regarding hardwood species and small forest holdings. Subsequently some arguments are listed, which are being considered in current forest policy discussion:

- Sustainable forestry is closer to nature in comparison to other forms of land use. High nature conservation standards for forestry are anchored in the Federal Forest Act and Federal Nature Conservation Act and the corresponding laws of the Laender. When it comes to forest management, stiff requirements are imposed today on the protection and the preservation of nature and the environment. In Germany's forests as a rule measures for the preservation and the protection of biodiversity are integrated into use. This means that, in principle and outside of protected areas, no distinction is made between commercial forests and conservation forests. This is one of the main components of modern multifunctional forestry. Forest conservation and species protection will continue to be an integral part of modern forestry in the future.
- In contrast to the generally growing timber stock in German forests spruce is the only tree species of which the stock declined, and that was by 4 %. At the same time the area of spruce shrank. This corresponds to the silvicultural and forestry policy target objective of recent years (e.g. promotion of deciduous trees/mixed stands). In case of spruce, which is (in terms of quantity and for the profitability of the forest sector) the most important tree species, stock reduction means a real challenge for future raw material supply of the softwood industry.
- Given the comparatively high level of timber stocks accumulated in historical and regional terms, these could even be reduced to a certain extent without violating the principles of sustainability. Yet, such a cutback in stocks is subject to controversy. A

¹⁶ Döring P., Glasenapp S., Mantau U. (2016); Energieholzverwendung in privaten Haushalten 2014. Marktvolumen und verwendete Holzsortimente. Hamburg S. 37

- general reduction in stock could only be achieved by a general shortening of rotation periods. In this regard it is important to know that in Germany it is not the Federal Government but the forest owners concerned who stipulate the rotation periods. Finally in its National Forest Strategy 2020 German Federal Government has recorded that timber harvesting could be auctioned up to the maximum average annual growth.
- In 2016 the German “Climate Action Plan 2050” was developed as a long-term strategy to face the commitments from the Paris agreement under the UNFCCC. The plan elaborates inter alia upon the importance of forests for climate protection and renders most relevant the conservation and enhancement of forest sinks and unlocking the CO₂-mitigation potential of sustainable forest management and linked timber use. Thus, the productivity of German forests and their sustainable management has to be maintained and supported, and the contribution to climate protection through the use of sustainably produced timber should be optimized. The current German GHG-Emissions would be 14 % higher without the contributions of our forests and the manifold timber products.
 - Shorter rotation periods have so far been inconsistent with the Federal Government's and the Laender forest promotion policies that have been in force for decades (close-to-nature silviculture with a high percentage of hardwood and long rotation periods, old tree and habitat tree schemes etc.). It would, at present, be difficult to enforce market and funding policy incentives fostering shorter rotation periods. Moreover, regulatory policy requirements in this regard would interfere with property rights. Nevertheless, to tackle the risks of climate change in forestry, shorter rotation periods could be one approach to minimize damages caused by extreme weather events.
 - A possible reduction in stocks/shorter rotation periods meets with strong opposition from nature conservationists. Requirements and policy decisions for nature conservation are increasingly curbing timber production in forests (e.g. the setting-up of national parks in forests, implementation of the target of "5 % set-aside for natural forest development" of the National Biodiversity Strategy and restrictions on timber use in Natura 2000 areas). In addition, nature conservation would like to have the very hardwood potential set aside that is intended for increased use. Further potential that is presumed to lie in small private forest properties is difficult to mobilize.
 - Demographic processes suggest that this situation will tend to worsen rather than improve. The general trend for the percentage of forest owners who take either little or no interest in forestry as a source of income is to rise. This holds true for urban forest owners and increasingly for forests owned by nature conservation organizations and foundations (e.g. National Natural Heritage). Incidentally, the decision on whether to harvest or to market wood rests solely with the forest owner.
 - The options for increasing forest increments seem to be limited. Opportunities lie in a replacement of tree species and provenances by more vigorous alternatives, fertilization and modification of silvicultural treatment. This is called into question by the following factors: The size of the annual regeneration area is small. It is only after several decades that the change of tree species or provenances will result in an increase in raw wood potential. It is also disputed whether this could be an alternative, given the role

played by other factors such as production security, falsification of flora and nutrient sustainability. These measures are furthermore subject to the targets set by owners and are inconsistent with current forest policy goals which championed close-to-nature silviculture with a high proportion of hardwood and long rotation periods.

- Another aspect to satisfying demand is to increase imports of wood, semi-finished and finished products. The option to cover the forecast demand for raw wood via the global market on a lasting basis seems uncertain. Regarding increased raw material imports there may be only limited options due to a generally growing global demand, additional costs for transport and adverse impacts on life-cycle-balances. However, examples of major export countries round the globe demonstrate that there is some potential in this respect.

3.5 How to best meet future challenges

The above-mentioned arguments clearly demonstrate the complex initial situation for identifying best possible solutions. Expectations of society on forest functions are increasing not only due to a higher demand for timber and woody biomass as renewable materials, but also as a consequence of more stringent requirements regarding nature conservation, adaptation of forests to climate change, their possible contribution to reducing greenhouse gas emissions and services for recreation. Taking into account those expectations and keeping in mind the needs of future generations as well as the acceptance of possible decisions and actions, initiatives should in principal be based on the equal consideration of the three dimensions of sustainability (ecological, economic and social matters). As renewable resources will gain importance in a society based on green economy, this raises the question as to how forests can best contribute towards meeting the numerous future challenges within the framework of multifunctional forestry. One major task of future forest policy, as pursued with the “National Forest Strategy 2020”, is to aim at striking a resilient balance between differing interests and growing demands made on forests and their sustainable performance. The “Charter for Wood 2.0” should become one of the most important instruments to achieve the goals of the “National Forest Strategy 2020” in the field of timber utilization.

4. Development in forest products sectors

4.1 Roundwood markets

The domestic use of roundwood is still dominated by softwood. Roughly three quarters of the used roundwood were coniferous species. The German timber industry is even more 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.

According to official harvest statistics, in 2017 about 53.5 million m³ commercial volume under bark were felled (+2.5 % compared with 2016). The species group “spruce” accounted for 54 % of the total felling, “pine” for 22 %, “beech” for 20 % and “oak” for 4 %. Comparing the development of fellings 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 m³) do not completely cover the volumes, harvested in and removed from the forest. Especially removals in enterprises managing smaller forest areas (*inter alia* registration problems) and fuelwood removals are underestimated.

In order to provide more realistic accounts of harvesting volumes an additional methodological approach is used in Germany. The method is based on the recalculation of the used amount of roundwood, differentiated into the various users (Jochem et al. 2015)¹⁷. Databases are official statistics, statistics of industry associations, and results of various empirical studies.

Also, results from the most recent third Federal Forest Inventory Study estimate the average annual harvest in the period 2003 to 2012. The third Federal Forest Inventory allows at a ten-year interval the determination of fellings and verifies the derivation on the demand side. The new data from the third Federal Forest Inventory allows, for the first time for the entire German forest area, a detailed verification of timber use in forests broken down by the Laender and categories of forest ownership.

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

17 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

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	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	68.7
2015	55.6			69.9
2016	52.2			67.4
2017	53.5			66.8

BMEL, Thünen-Institute¹⁸

4.2 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 almost 2/3 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 and employment. With a workforce of around 1.6 million and a gross value added of about 434 billion euros, it is among the most important sectors in the national economy. 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.

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

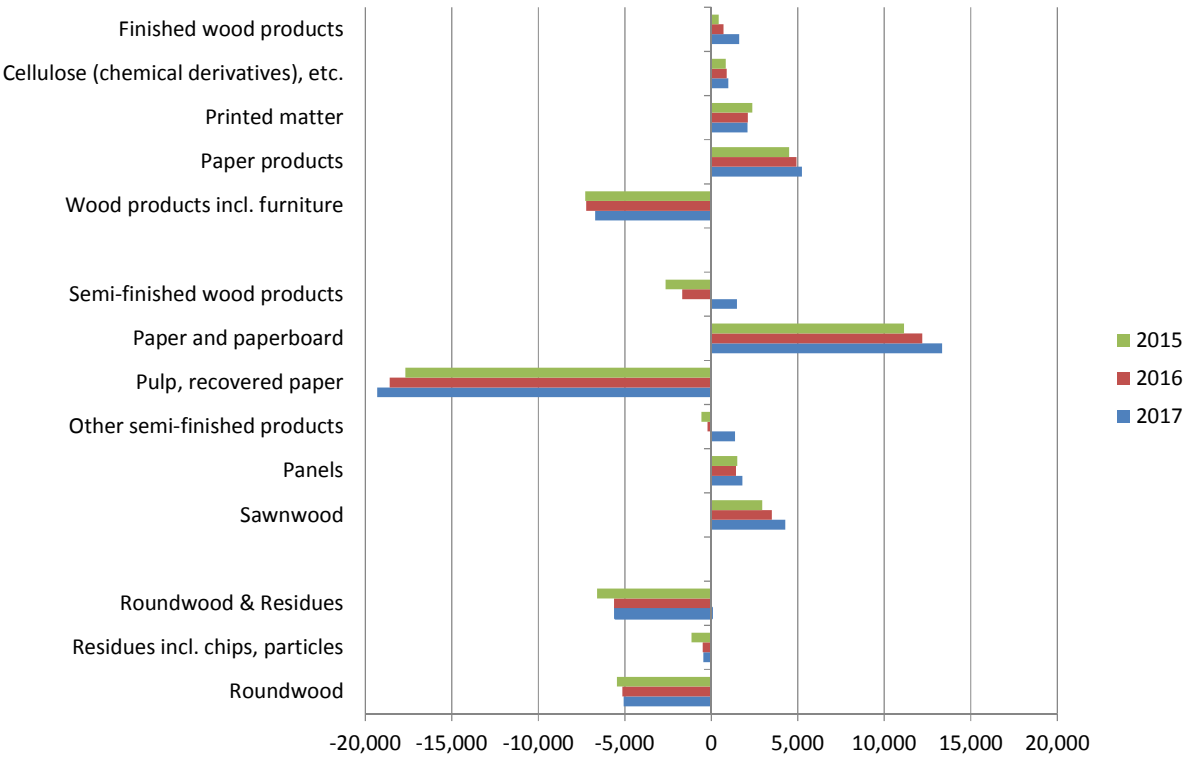
German trade with wood and wood based products showed in the period 2015 to 2017 a decrease in net imports, measured in roundwood equivalents (m³(r)): 8.8 million m³(r) in 2015 and 6.6 million m³(r) in 2016. Preliminary data for 2017 show net imports of 2.4 million m³(r). In monetary terms, however, net trade shows a surplus in all recent years. Moreover, net exports are slightly increasing: In 2015 net exports of 5.5 billion Euros of wood and wood

¹⁸ TI-WF (2018): 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/

based products could be achieved. 2016 shows a further decrease to 5.7 billion Euros. Preliminary data for 2017 describe a further increase of net exports to 6.5 billion Euros.

The following **figures 4 and 5** show the German trade balance of wood and wood based products of different product groups in the time period 2015 to 2017 in million m³(r) and in 1,000 million Euros.

Figure 4: Trade balance of product groups of wood and wood based products in the years 2015 to 2017 (in 1,000 m³ (r))

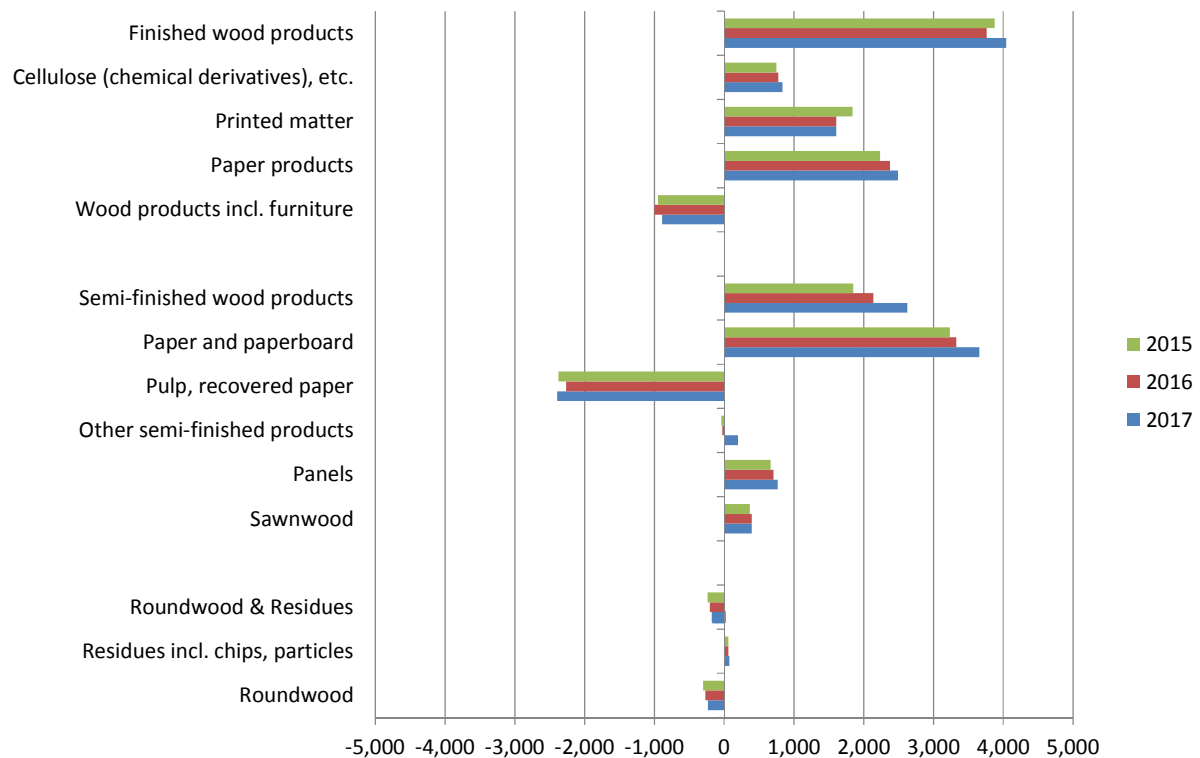


Federal Statistical Office, calculated by Thünen Institute. 2017: Preliminary data

The main product group of roundwood and residues shows net imports in the period 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 also residues have a net import in quantity, while monetary values still show a slight net export.

Trade with semi-finished wood products shows a change from net imports to net exports in 2017 (preliminary data) (measured in roundwood equivalent m³ r). However, in monetary values semi-finished wood products still have a constant annual export surplus of about two billion Euros per year. Within this main product group, pulp and recovered paper show significant net imports, while the export surplus is mainly based on paper and paperboard and to a minor degree on panels and sawnwood.

Figure 5: Trade balance of product groups of wood and wood based products in the years 2015 to 2017 (in million Euros)



Federal Statistical Office, calculated by Thünen Institute. 2017: 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.

4.4 Sawnwood (softwood/hardwood)

In 2017, about 17,502 people were employed in the German sawmilling industry (+0.8 % against 2016). The total turnover amounted to 5.9 billion euros (+ 5.4 % against previous the year). With an export quota of 29.6 %, the export turnover amounted to 1.8 billion euros. Compared with 2016, the entire export turnover increased by 15.5 % (companies with 20 and more employed persons)¹⁹.

With about 22.1 million m³, the domestic production of sawn softwood (coniferous) increased by 4.5 % in 2017 compared with 2016. The apparent consumption of coniferous sawnwood

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

slightly increased to 19.3 million m³ (+2.6 % compared with 2016). German exports of sawn softwood amounted to 7.5 million m³ and the imports to 4.7 million m³ in 2017. The annual apparent consumption of sawn hardwood amounted to 0.7 million m³ and shows a decrease of 4.2 % compared to 2016. The domestic production increased about 2.7 % and is at a level of 1.1 million m³ of sawn hardwood.

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

In 2017, the German panel industry employed approximately 13,840 people (+1.6 % against 2016) and recorded a total turnover of slightly more than 5.0 billion euros. Compared with 2016, the total turnover increased by 1.6 %. About 35.5 % of the turnover depended on foreign trade (1.8 billion euro). Compared with 2016, the entire export turnover increased by 3.2 % (companies with 20 and more employees)²⁰. The annual production of the German panel industry amounted to 7.2 million m³ of particle boards (including OSB) (+2.8 %) and to 5.7 million m³ of fiberboards (+6.4 %). The apparent consumption of particle boards (including OSB) was estimated to be 7.7 million m³ (+0.6 % compared with 2016) and of fibreboards to be 3.4 million m³ (+9.1 % compared with 2016).

4.6 Pulp and paper

In 2017, approximately 38,201 people were employed in the German pulp and paper industry (-0.5 % compared with 2016) at about 175 production sites (-3.3 % against 2016). The total turnover increased to 17.1 billion euro (change from previous year: +3.6 %). With an export quota of 58.3 %, the export turnover amounted to 10.0 billion euro. Compared with 2016, the entire export turnover increased by 3.4 % (companies with 20 and more employed persons)²¹. The annual production of paper and paperboard amounted to 22.9 million tons (+ 1.3 % against 2016)²². 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 20.4 million tons (-0.6 % compared with 2016 and according to actual data of the German Pulp and Paper Association). Wood consumption by German pulp and paper mills was estimated to be 9.6 million m³ in 2017, which is a minus of 0.8 % compared with 2016²².

4.7 Pellet industry

German producers of wood pellets basically benefited from growing demand for renewable energy generation in the long term, but were in the last years suffering from relatively mild winters. Producing 0.3 million tons in 2005 (of which domestic consumption was about 0.2

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

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

²² VDP (2015): Paper 2015: Annual Report. Tab. N8; N16, N18

million tons) it was possible to increase production up to 2.25 million tons until 2017. About 450,000 tons of pellets have been exported in 2016 (+23.5 % compared with 2016), while imports decrease in 2017 to 391,000 tons (-11.7 % compared to 2016). Domestic consumption increased in 2017 to 2.2 million tons (a plus of 9.0 % compared with 2016). 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).

4.8 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 ²³) employed 148,354 people in 2017 (+ 0.8 % compared with 2016). 51,973 of these were employed in the woodworking industry, 96,381 in the furniture industry. The total turnover amounted to 28.1 billion euro, an increase of 1.1 % compared with 2016. The increase is only due to the woodworking industry (+ 5.1 %), while the furniture industry showed a decrease of about -0.8 %. The turnover of the furniture industry is significantly higher (18.8 billion euro in 2017) than turnover of the woodworking industry (9.4 billion euro). With an export quota of 24.8 % the export turnover amounted to 7.0 billion euro in 2017. The export quota of the furniture industry is considerably higher than the export quota of the woodworking industry (31.2 % compared to 11.9 %). The export turnover of the woodworking industry shows an increase compared with 2016 (+2.2 %) while the export turnover of the furniture industry decreased by -0.5 %.

²³ In accordance with NACE Codes 16.22, 16.23, 16.24, 16.29, 31.01, 31.02, 31.09



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 2017 have been revised.

Product Code	Product	Unit	Historical data		Revised	Estimate	Forecast
			2016	2017	2017	2018	2019
1.2.1.C	SAWLOGS AND VENEER LOGS, CONIFEROUS						
	Removals	1000 m ³ ub	24.712	26.520		26.600	26.800
	Imports	1000 m ³ ub	4.200 #	4.200 #		4.100	4.100
	Exports	1000 m ³ ub	1.300 #	1.200 #		1.300	1.300
	Apparent consumption	1000 m ³ ub	27.612	29.520		29.400	29.600
1.2.1.NC	SAWLOGS AND VENEER LOGS, NON-CONIFEROUS						
	Removals	1000 m ³ ub	3.471	3.314		3.300	3.200
	Imports	1000 m ³ ub	150 #	150 #		200	200
	Exports	1000 m ³ ub	850 #	850 #		900	900
	Apparent consumption	1000 m ³ ub	2.771	2.614		2.600	2.500
1.2.1.NC.T	of which, tropical logs						
	Imports	1000 m ³ ub	15 #	15 #		8	8
	Exports	1000 m ³ ub	2 #	2 #		2	2
	Net Trade	1000 m ³ ub	13	13		6	6
1.2.2.C	PULPWOOD (ROUND AND SPLIT), CONIFEROUS						
	Removals	1000 m ³ ub	8.256	7.611		8.300	8.350
	Imports	1000 m ³ ub	2.650 #	2.650 #		4.100	4.100
	Exports	1000 m ³ ub	800 #	800 #		1.100	1.100
	Apparent consumption	1000 m ³ ub	10.106	9.461		11.300	11.350
1.2.2.NC	PULPWOOD (ROUND AND SPLIT), NON-CONIFEROUS						
	Removals	1000 m ³ ub	3.736	3.275		3.200	3.300
	Imports	1000 m ³ ub	200 #	200 #		300	300
	Exports	1000 m ³ ub	300 #	300 #		400	400
	Apparent consumption	1000 m ³ ub	3.636	3.175		3.100	3.200
3	WOOD CHIPS, PARTICLES AND RESIDUES						
	Domestic supply	1000 m ³	13.612 C	14.230 C		14.500	14.800
	Imports	1000 m ³	1.786 C	2.045 C		2.000	2.100
	Exports	1000 m ³	2.580 C	2.431 C		2.400	2.300
	Apparent consumption	1000 m ³	12.818	13.844		14.100	14.600
1.2.3.C	OTHER INDUSTRIAL ROUNDWOOD, CONIFEROUS						
	Removals	1000 m ³ ub	1.417	1.572		1.500	1.520
1.2.3.NC	OTHER INDUSTRIAL ROUNDWOOD, NON-CONIFEROUS						
	Removals	1000 m ³ ub	1.188	1.270		1.300	1.310
1.1.C	WOOD FUEL, CONIFEROUS						
	Removals	1000 m ³ ub	4.667	5.192		5.100	5.100
1.1.NC	WOOD FUEL, NON-CONIFEROUS						
	Removals	1000 m ³ ub	4.747	4.737		4.800	4.800

Please return (preferably by e-mail) to Timber Section no later than 5 October 2018.

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

Questions? Please contact Alex McCusker at the above address or telephone +41 22 917 2880.

The historical data are from the most recent Joint Forest Sector Questionnaire (blank) or the Timber Forecast Questionnaire (#). For explanations please see cover letter. These data are flagged with E, R, N or C for secretariat estimate, repeat, national estimate or calculated totals (from subitems). If there is no flag, this indicates officially supplied data.

**UNECE****TF2****TIMBER FORECAST QUESTIONNAIRE**
Forest products

Country: Germany	Date:
Name of Official responsible for reply:	
Official Address (in full):	
Telephone:	Note: Complete only if data for 2017 have been revised.
E-mail:	

Product Code	Product	Unit	Historical data		Revised	Estimate	Forecast
			2016	2017	2017	2018	2019
6.C	SAWNWOOD, CONIFEROUS						
	Production	1000 m ³	21.109 N	22.050 N	22.056	23.000	23.000
	Imports	1000 m ³	4.718	4.738	4.995	5.000	5.000
	Exports	1000 m ³	7.050	7.519	7.828	8.500	8.500
	Apparent consumption	1000 m ³	18.777	19.269	19.223	19.500	19.500
6.NC	SAWNWOOD, NON-CONIFEROUS						
	Production	1000 m ³	1.088 N	1.117 N	1.082	1.050	1.020
	Imports	1000 m ³	395	406	379	350	350
	Exports	1000 m ³	723	795	781	745	710
	Apparent consumption	1000 m ³	760	728	680	655	660
6.NC.T	of which, tropical sawnwood						
	Production	1000 m ³	0 N	0 N	0	0	0
	Imports	1000 m ³	42	69	91	90	90
	Exports	1000 m ³	42	38	37	40	40
	Apparent consumption	1000 m ³	0	30	54	50	50
7	VENEER SHEETS						
	Production	1000 m ³	87 C	89 C		90	90
	Imports	1000 m ³	125 C	115 C		120	120
	Exports	1000 m ³	50 C	64 C		60	60
	Apparent consumption	1000 m ³	161	140		150	150
7.NC.T	of which, tropical veneer sheets						
	Production	1000 m ³	0 N	0 N		0	0
	Imports	1000 m ³	15	10		12	12
	Exports	1000 m ³	4	3		3	3
	Apparent consumption	1000 m ³	11	7		9	9
8.1	PLYWOOD						
	Production	1000 m ³	114 C	100 C		100	100
	Imports	1000 m ³	1.458 C	1.509 C		1.500	1.500
	Exports	1000 m ³	349 C	373 C		370	370
	Apparent consumption	1000 m ³	1.223	1.236		1.230	1.230
8.1.NC.T	of which, tropical plywood						
	Production	1000 m ³	0 N	0 N		0	0
	Imports	1000 m ³	123	173		170	170
	Exports	1000 m ³	30	48		50	50
	Apparent consumption	1000 m ³	93	126		120	120
8.2	PARTICLE BOARD (including OSB)						
	Production	1000 m ³	7.016 N	7.211 N		7.220	7.300
	Imports	1000 m ³	2.927	2.901		2.900	2.900
	Exports	1000 m ³	2.271	2.397		2.400	2.450
	Apparent consumption	1000 m ³	7.673	7.716		7.720	7.750
8.2.1	of which, OSB						
	Production	1000 m ³	1.398 N	1.452 N		1.460	1.465
	Imports	1000 m ³	746	749		750	750
	Exports	1000 m ³	518	519		520	522
	Apparent consumption	1000 m ³	1.627	1.681		1.690	1.693
8.3	FIBREBOARD						
	Production	1000 m ³	5.399 C	5.745 C		5.775	5.820
	Imports	1000 m ³	1.200 C	1.245 C		1.235	1.300
	Exports	1000 m ³	3.455 C	3.558 C		3.595	3.700
	Apparent consumption	1000 m ³	3.145	3.431		3.415	3.420
8.3.1	Hardboard						
	Production	1000 m ³	2.396 N	2.453 N		2.475	2.500
	Imports	1000 m ³	223	212		210	210
	Exports	1000 m ³	1.430	1.625		1.625	1.640
	Apparent consumption	1000 m ³	1.189	1.039		1.060	1.070
8.3.2	MDF/HDF (Medium density/high density)						
	Production	1000 m ³	1.502 N	1.510 N		1.510	1.520
	Imports	1000 m ³	479	345		345	340
	Exports	1000 m ³	1.605	1.169		1.200	1.280
	Apparent consumption	1000 m ³	376	685		655	580
8.3.3	Other fibreboard						
	Production	1000 m ³	1.502 N	1.782 N		1.790	1.800
	Imports	1000 m ³	498	688		680	750
	Exports	1000 m ³	420	764		770	780
	Apparent consumption	1000 m ³	1.580	1.707		1.700	1.770
9	WOOD PULP						
	Production	1000 m.t.	2.485 C	2.433 C	2.432	2.444	2.444
	Imports	1000 m.t.	5.199 C	4.815 C	4.815	4.959	5.108
	Exports	1000 m.t.	1.258 C	1.202 C	1.202	1.082	974
	Apparent consumption	1000 m.t.	6.426	6.046	6.045	6.321	6.578
12	PAPER & PAPERBOARD						
	Production	1000 m.t.	22.629 C	22.931 C	22.931	23.106	23.523
	Imports	1000 m.t.	11.800 C	11.806 C	11.325	11.212	11.100
	Exports	1000 m.t.	13.959 C	14.384 C	13.783	14.060	14.340
	Apparent consumption	1000 m.t.	20.470	20.353	20.473	20.258	20.283
5.1	WOOD PELLETS						
	Production	1000 m.t.	1.932 N	2.250 N		2.350	2.400
	Imports	1000 m.t.	443	391	422	400	450
	Exports	1000 m.t.	365	451	488	550	600
	Apparent consumption	1000 m.t.	2.010	2.191		2.200	2.250

Please return (preferably by e-mail) to Timber Section no later than 5 October 2018.

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

Questions? Please contact Alex McCusker at the above address or telephone +41 22 917 2880.

The historical data are from the most recent Joint Forest Sector Questionnaire (blank) or the Timber Forecast Questionnaire (#). For explanations please see cover letter. These data are flagged with E, R, N or C for secretariat estimate, repeat, national estimate or calculated totals (from subitems). If there is no flag, this indicates officially supplied data.