

STATEMENT

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to the**

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1. General economic trends ¹

1.1 Policy for growth and prosperity

The German economy enjoyed a period of fast growth in 2010 and 2011, at 4.2 % and 3.0 %, which extended well into 2012. It remains highly competitive, and despite increasing burdens and risks from home and abroad, German economic growth remains robust. Employment and prosperity in Germany have been steadily increasing over the past few years.

In 2012, Germany – unlike the Eurozone as a whole – again registered impressive growth of 0.7 % (Table 1). However, the cyclical dynamism declined steadily over the course of the year. In addition to a tangible slowdown in the world economy, a main cause of the weak performance at the end of 2012 was the uncertainty amongst market players resulting from the high level of debt in the industrial countries, which right from the start of the year had severely affected the propensity of German firms to invest.

In its annual projection for 2013, the Federal Government expects the German economy to start expanding again. The growth will gain in strength in the course of the year. The poor winter half-year will however considerably reduce the average rate of growth for 2013 as a whole; it is expected to amount to 0.4 %. Nevertheless, over the course of 2013, this will correspond to a rise of 1.3 % in the price-adjusted gross domestic product from the fourth quarter of 2012 to the fourth quarter of 2013. This means that the German economy will continue to grow at a substantially faster pace than the Eurozone average.

This growth has been accompanied and driven by an ongoing rise in employment. More than 41 million people are in work, more than ever before in the history of the Federal Republic. The employment rate for women has risen since the middle of the last decade, from 63.1 % in 2005 by around 8 percentage points to more than 71 % in the second quarter of 2012. The employment rate for people aged between 55 and 64 rose – compared with 2005 – by more than 15 percentage points to around 61 % in the second quarter of 2012.

Incomes are rising faster than they have for a long time, and employees are keeping more of their pay packets. Disposable income has been expanding at an average of 3 % a year for the last three years – the last time that happened was during the reunification boom in the early 1990s.

¹ <http://www.bmwi.de/EN/Service/publications,did=556800.html>

Table 1: Selected key figures for macroeconomic trends in the Federal Republic of Germany ¹⁾	2011	2012	Annual projection 2013
	% change on preceding year		
Gross domestic product (output approach GDP, real)	3.0	0.7	0.4
Total employment	1.4	1.0	0.0
Unemployment rate in % (Federal Employment Agency definition) ²⁾	7.1	6.8	7.0
GDP by expenditure (real)			
Private consumption expenditure	1.7	0.8	0.6
Machinery and Equipment	7.0	-4.4	-1.3
Construction	5.8	-1.1	1.3
Domestic demand	2.6	-0.3	0.6
Exports	7.8	4.1	2.8
Imports	7.4	2.3	3.5
External balance of goods and services (contribution to GDP growth) ³⁾	0.6	1.1	-0.1
Total gross wages and salaries per employee	3.4	2.6	2.6

¹⁾ Up to 2012 results of the Federal Statistical Office, National Accounts Status: 15. January 2013;

²⁾ In relation to the total labor force;

³⁾ Contribution to GDP growth rate.

Germany is pursuing a pro-growth policy on taxes and charges. The contributions to social insurance funds paid equally by employers and employees are not only remaining below 40 % of wages, but have actually been cut. In the 2009-2012 period alone, the rise in consumer spending roughly equaled that seen in the entire eight preceding years.

German companies are extremely competitive. They are reaping the benefits of a responsible and differentiated approach to wage-setting by the social partners, of stable financing conditions and good infrastructure. Research and development are ensuring that German firms retain their innovative edge. As an average for the last twenty years, it has driven almost two-thirds of Germany's growth.

Public-sector spending declined as a proportion of Gross Domestic Product. At the same time, Germany's economy has grown strongly. Upholding and strengthening the competitiveness

and resilience of Germany's economy is a permanent task which the German government is continuing to tackle. But the risks for the cyclical development have risen appreciably and come from two sides: firstly, the debt crisis in the Eurozone and the generally slower global economic environment threaten to weaken the forces driving growth. Secondly, there is the danger that the successes on public finances and on the labor market will result in political pressure to risk the progress made on budget consolidation and flexibilisation.

In the 2012 progress report on the national sustainability strategy, the Federal Government depicts the framework for sustainable economic activity in Germany. This includes the energy reforms and fiscal sustainability based on debt brakes in Germany and Europe. When viewed in the correct light, sustainability is also a major competitive advantage, and it has already enabled German firms to position themselves well in global competition.

1.2 More liability on the financial markets

If prices are to be able to act as a signal, the value of money must develop in a stable manner. The European Central Bank (ECB) thus has a clear mandate: the supreme objective of monetary policy is stability of the price level. It is therefore crucial for the ECB to return to its normal monetary policy mode as swiftly as possible.

In the work on the further integration of the European banking market, it is important to proceed step-by-step on the basis of clear market-based principles of liability. In particular, the European Stability Mechanism (ESM) will only be granted the possibility to provide direct assistance to banks once an effective European banking supervision system has been established and the financial means of the respective member state have been exhausted. First of all, the banks themselves are liable, then the creditors, the affected countries, and only then, if there is a risk to the stability of the overall European financial system and its member states, can the ESM provide conditional aid as a last resort. The Federal Government is working towards a European banking supervisory system with high quality standards. At the same time, it is necessary to uphold the independence of the ECB's monetary policy.

In Federal Government's demography strategy, it is committed not least to making the German labor market even more open for qualified professionals from abroad. The Federal Government also advocates open markets in the international arena and concludes free-trade and raw-materials agreements. It takes a vigorous stand against protectionism, because the more open the markets are to foreign players, the easier it is to realize the advantages of competition.

In order to create more scope for economic freedom and individual responsibility, the Federal Government is reducing the tax burden on citizens and companies this year by a total of nearly € 8 bn. It is working to create a system of taxes and welfare contributions which rewards achievement more fairly, it is cutting red tape, and it is boosting participation via better prospects in terms of education, career and job opportunities.

1.3 Safeguarding prosperity and future opportunities

One of the reasons why the German economy has developed so well in recent years is its high capacity to innovate. German firms export technology products worth more than € 500 bn a year. That makes Germany the world leader in this field. The Federal Government has provided an additional amount of approx. € 13.3 bn in this period of legislation: € 7.2 bn for education and € 6.1 bn for research. At around 2.9 % of GDP, Germany's research funding ratio was already well above the EU average in 2011, and was close to the 3 % target of the Europe 2020 Strategy.

In addition to the large industrial multinationals, the small and medium-sized enterprises (SME) in the industrial and services sectors ensure a high capacity for innovation and a strong level of competitiveness in the German economy. Here, the Federal Government's economic policy is creating the necessary scope for entrepreneurship. Not least, this is being reflected in a steadily rising equity ratio in the German SME sector. It has probably risen to around 20 % – back in the late 1990s, it was well below 5 %.

Despite substantial additional burdens on the budget, the Federal Government has stuck to its policy of pro-growth budget consolidation. Its strict spending discipline has made a major contribution towards reducing the public-sector share of GDP – following the expiry of the stimulus packages – from 48.2 % in 2009 to 45.0 % in 2012. It is fully adhering to, and even exceeding, all the commitments to consolidate the budgets entered into at national and international level: Germany met the 3 % Maastricht criterion back in 2011, two years earlier than had been required by the European deficit procedure from 2009.

The Federal Government will stick to its course in 2013 as well. The structural deficit in the Federal budget is to drop below the ceiling of 0.35 % of GDP (which is to apply from 2016) this year already – three years earlier than required. Functioning competition, open markets, a reliable system of labor law, economic freedom and individual responsibility must also be the underlying principles on the labor market. The Federal Government has resolutely strengthened the capacity of the labor market to function in recent years.

Demographic change is one of the greatest social and economic challenges. Skills shortages and the ageing of the population mean that we need to integrate as many people as possible into the labor market. In order to foster the development of the potential of domestic and foreign labor even further, the Federal Government adopted a concept on securing the supply of skilled labor in June 2011.

The EU Blue Card and the visa permitting people to come and look for work are proof of the Federal Government's clear commitment to a system of guided immigration based on the needs of the labor market. The relaxed rules on immigration for workers with academic qualifications from non-EU countries entered into force on 1 August 2012. The German economy now needs immigration of people with vocational rather than academic qualifications in sectors experiencing a skills shortage.

2. Policy measures and market drivers affecting the forest sector

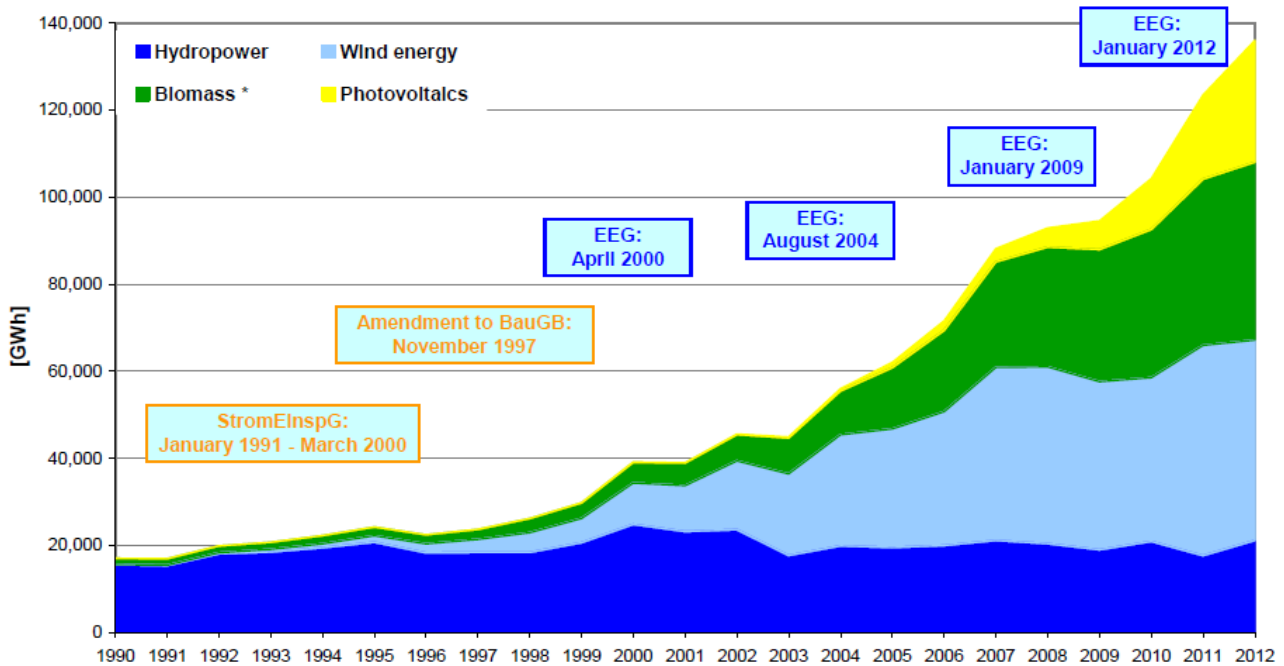
2.1 Developing renewable energy and securing energy supply

In order to meet the EU- Climate and Energy package of 2008 the Federal Government launched, on the basis of the 2010 Energy Concept², a fundamental restructuring of Germany's energy supply towards renewable energy and higher energy efficiency in 2011. The proportion of energy consumption covered by renewables is to rise to 30 % by 2030 and to 60 % by 2050; the share of gross electricity generation is to rise to at least 35 % by 2020 at the latest and to at least 80 % by 2050 at the latest. By 2020, primary energy consumption is to fall by 20 % and by 2050 by 50 % (base year: 2008).

As the development of renewables-based electricity generation demonstrates, the upswing of renewable energy in Germany is already in progress (Figure 1). Renewable energy share of total "final energy consumption" is 12.6 % (2012) of which about 2/3 are based on biomass (mostly wooden biomass). But for meeting the targets of EU-Biomass Action Plan, an ongoing development of energy saving, increase of efficiency and expansion of renewable energy sources as well as availability of renewable raw materials is necessary.

² http://www.bundesregierung.de/Content/DE/_Anlagen/2012/02/energiekonzept-final.pdf?__blob=publicationFile&v=5

Figure 1: Development of renewables-based electricity generation in Germany 1990 - 2012
(1 GWh = 1 Mill. kWh)



* Solid and liquid biomass, biogas, sewage and landfill gas, biogenic fraction of waste; electricity from geothermal energy not presented due to negligible quantities produced;

StromEinspG: Act on the Sale of Electricity to the Grid

BauGB: Construction Code

EEG: Renewable Energy Sources Act

Source: BMU - E I 1 according to Working Group on Renewable Energy-Statistics (AGEE-Stat); as at: February 2013³; all figures provisional

In the first step it is now important to liberalize the energy markets in Germany and Europe further. Competition in the energy sector is to ensure that all consumers can benefit from energy which is as low-cost as possible. The Federal Government has taken some initial steps to restrict the rise in the cost of subsidizing photovoltaic. Yet the Government is paying particular attention to maintaining security of supply to households and companies. The comprehensive expansion of the grids must put the necessary infrastructure in place so that the energy supply will remain secure even as the proportion of renewables grows. Also the public is being involved in projects at an early stage in order to boost public acceptance and the transparency of the expansion of the grid.

At last the aim has to be to integrate renewable energy into the electricity market, to restrict costs to a reasonable level, to ensure a high degree of investment security, and to improve the

³ <http://www.erneuerbare-energien.de/en/topics/data-service/graphics/>

interplay of renewable energy with the rest of the energy supply. In particular, the storage capacities must be expanded. They have to keep pace with the creation of new wind and solar capacities.

In addition to energy savings, energy efficiency also plays a vital role in a successful re-orientation of energy policy. It reduces the level of dependency on imports and cuts the costs of energy for companies and consumers. Germany wants to become one of the world's most energy-efficient and environmentally-friendly economies, while at the same time enjoying competitive energy prices and a high level of prosperity.

2.2 Continuing trend towards renewable energy sources

Global demand for renewable energy continued to rise during 2011 and 2012, supplying an estimated 19 % of global final energy consumption in 2011 (the latest year for which data are available), with a little less than half from traditional biomass. Total renewable power capacity worldwide exceeded 1,470 GW in 2012, up about 8.5 % from 2011. Globally, wind power accounted for about 39 % of renewable power capacity added in 2012, followed by hydro-power and solar PV, each accounting for approximately 26 %.

The top countries for renewable power capacity at year's end were China, the United States, Brazil, Canada, and Germany. In Germany, renewables accounted for 22.9 % of electricity consumption (up from 20.5 % in 2011), 10.4 % of national heat use, and 12.6 % of total final energy demand (Table 2). At least 138 countries had renewable energy targets by the end of 2012. And an estimated 5.7 million people worldwide work directly or indirectly in the sector. This was announced by the REN21 policy network⁴ in its annual Renewables Global Status Report (GSR).

⁴ The Renewable Energy Policy Network for the 21st Century (REN21) is a global network that was formed in 2005 after the "renewables 2004" conference in Bonn. It unites governments, international organizations and non-governmental organizations as well as representatives of the private sector, the financial sector, and civil society organizations from the energy, environment and development spheres. REN21 receives financial support from the German Environment and Development Ministries.

Table 2: Contribution of renewable energy sources to energy supply in Germany		
Share of renewable energy sources (%)		
	2011	2012
in total final energy consumption	12.2	12.6
in total gross electricity consumption	20.5	22.9
in total heat supply	10.4	10.4
in total fuel consumption	5.6	5.5
in total primary energy consumption	10.9	11.7

Source: BMU-KI III 1 according to Working Group on Renewable Energy-Statistics (AGEE-Stat)

2.3 Reducing greenhouse gas emissions

Climate protection remains the greatest challenge facing environmental policy. Climate researchers have identified numerous developments indicating that climate change is already underway. For example, of the ten hottest years on record since global temperatures started being compiled in the mid-19th century, seven of these have occurred during the past decade. In the view of many scientists, there is a high degree of probability that this development is attributable to human influence. For this reason, human-induced emissions of greenhouse gases - particularly carbon dioxide generated from fuel combustion - must be drastically reduced across the globe.

In the 1997 Kyoto Protocol to the United Nations Convention on Climate Change, the industrialized nations committed themselves to reducing their emissions of six greenhouse gases by at least 5 % over 1990 levels within the commitment period 2008-2012. The member states of the European Union reached an agreement on how they will divide up their share of emissions reductions amongst themselves: under this agreement, Germany's emissions reductions target is 21 %.

From 1994 through 2006, Germany cut its greenhouse gas emissions by nearly 19 %. This was chiefly a result of modernization processes in the new Laender, but measures implemented as part of the German government's climate protection program played a key role as well. In 2007 Germany fulfilled its 21 % emissions reductions target. It already achieved a reduction of 26.7 % in 2011.

On 5 December 2007, the German government unveiled its Integrated Energy and Climate Programme, which aims to set a global example in the fields of energy and climate policy and is suited to the needs and capabilities of a modern national economy. The launch was timed to coincide with the kick-off of the United Nations Climate Change Conference in Bali, which was held from 3-15 December 2007. The programme is based on the conviction that

- energy must be used with much greater efficiency than is currently the case and
- a much higher priority must be placed on the use of low-carbon energy.

The adopted measures aim to prove that climate protection is both affordable and compatible with economic growth. For this reason, the German government is pursuing policies that deliver favorable results in keeping CO₂ emissions low, but that are also as cost-effective as possible. Our aim is to achieve positive environmental outcomes without having a negative impact on consumers and the competitiveness of German business.

As table 3 demonstrates, in 2012 renewable energies contributed to climate protection with CO₂ savings of about 141 million tons (2011: 130 million tons).

Table 3: Greenhouse gas (GHG) and CO₂ emissions in Germany (2012)			
million tons	GHG		CO ₂
total GHG emissions	931.1		
total CO ₂ emissions			814
Greenhouse gas (GHG) and CO₂ reductions by renewables (2012)			
	all renewables	bio-based	all renewables
electricity generation	100.8	28.0	94.4
heat generation	40.0	38.1	39.9
biogenic fuel generation	4.7	4.7	6.8
Total	145.5	70.8	141.1

Deviations in the totals are due to rounding

Source: BMU-KI III 1 according to Working Group on Renewable Energy-Statistics (AGEE-Stat) and Federal Environment Agency (UBA)

2.4 Protecting the global climate – strengthening the role of renewables

Even without nuclear power Germany is sticking to the target of reducing emissions of greenhouse gases by 40 % by 2020 and by at least 80 % by 2050 (taking 1990 as a base year). By 2020 power generated from wind power, biomass, solar power and other renewables is to account for a minimum of 35 % of the total (2011: 20.5 % achieved) and in heat consumption up to 14 % (2011: 10.4 % achieved). In the course of the further development of its Biomass Strategy the Federal Government has revised the original goal of expansion for biofuels. In the year 2020 the target now is 10 % instead of 12 % (2011: 5.5 % achieved).

Following the main guiding principles “security of supply”, “economic efficiency” and “environmental protection”, the Energy and Climate Programme contains about 30 key elements including a package of different acts and ordinances. Offering incentives for modernisation and technological innovation the programme aims at stepping up the number of jobs within the renewable energy sector. Some examples of measures:

- To increase the share of renewables within the electricity sector significantly, an amendment of the Renewable Energy Sources Act (EEG) with new provisions for regulating tariffs also for biomass entered into force in 2012.
- Obligations to use renewables in new buildings are laid down in the Renewable Energies Heat Act. All owners of newly erected buildings are obliged to use a certain amount of renewables for their heat requirements (solar radiation, geothermal energy, ambient heat or biomass). For example, the use of biomass has to cover at least 50 % of the new building’s heat demand. However, pellets, wood chips and fuelwood may only be used in furnaces which comply with strict national provisions on air quality control and have a particularly high boiler efficiency factor. Alternatively it is possible to improve insulation of buildings, obtain heat from district heating systems or use heat from combined heat and power generation (CHP). An amendment of this act is scheduled for 2014.
- Since the Federal Market Incentive Programme for renewable energies was launched in 2000 it has successfully provided financial support, amounting in 2012 to more than 300 million euros, which in turn has triggered investments of about 1.3 billion euros. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety sets out the guidelines on the funding of measures for the use of renewable energies, which offers the possibility to apply for investment grants or a long-term low-interest loan including a redemption grant.
- Sustainability Ordinances for biofuels and electricity from biomass will ensure that when producing biomass for biofuels and electricity, a minimum requirement for sustainable management of resources and for the conservation of natural habitats are

complied with. Furthermore the entire production, processing and supply chain must show a certain potential for reducing greenhouse gases.

- The Act on Combined Heat and Power Generation and regulations for small and medium combustion installations in order to reduce particulate emissions are additional examples for improvements of underlying conditions for renewables.
- The German National Biomass Action Plan (2009), which outlines measures for the expansion of bioenergy, is expected to influence future developments on the wood energy market. Another important cornerstone in order to increase the share and efficiency of biomass for material purposes is the National Action Plan for the Industrial Use of Renewable Resources (2009).

2.5 On the way to a “green economy”

With its National Energy Strategy the Federal Government is ensuring that

- energy supplies will not be interrupted,
- the cost of power does not become prohibitive,
- Germany remains an attractive place to do business and that
- climate change mitigation targets will be met.

Boosting energy efficiency is the key to this, by using modern technologies to reduce electricity consumption or by refitting our buildings, which in any case raises their value. It will be putting in place the pertinent legal framework and introducing economic incentives, while making sure that all measures taken are affordable, cost-efficient and effective.

A faster phase-out of nuclear energy requires a faster reorganization of energy supply - a process started under the National Energy Concept. Climate protection will remain the decisive driving force. The climate targets agreed in the Energy Concept will be adhered to. This sends a strong signal about investment in innovation and technological progress. The thorough re-vamping of energy supply in Germany is a task for future decades, and is thus above all an opportunity for future generations. Political decisions aimed at combating climate change, saving energy and the latest decisions to close down nuclear power in Germany are increasingly exerting an influence on forestry, timber markets and timber trade.

2.6 Nature conservation

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 Conservation Act and Federal Nature Conservation Act and the corresponding laws of the Länder. 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, no distinction is made between commercial forests and conservation forests. This is one of the main components of modern multifunctional forestry. Forest conservation will continue to be an integral part of modern forestry in the future.

2.7 Promoting research, development and innovation

The Federal Government is providing targeted support for research and innovation. With numerous activities in the fields of promoting research and innovation, training, support for new start-ups, and standardization, an outstanding climate is being created for innovation, not least when compared internationally. These measures are packaged in the national High-Tech Strategy 2020⁵. At the same time, society must remain receptive to innovations, new technologies and dynamic market trends. Education and training must keep increasing people's level of understanding of new technologies and economic interrelationships.

2.8 Binding framework for forest management

In the pan-European policy process “Forest Europe”, the ministers responsible for forestry work together towards a common vision and objectives at European scale. At the 6th Ministerial Conference in Oslo in June 2011, they gave green light for negotiations on a legally binding forest instrument and established an Intergovernmental Negotiation Committee (INC). One of the biggest challenges facing all European countries is the conflict between the growing demand for timber on the one hand, and the call for a widening of the renunciation of uses on nature conservation grounds on the other. The “EUwood” study⁶ commissioned by the European Commission predicts a shortage in supply by 2030 of between 150 and 420 million cubic meters of timber per year in the EU unless counter-action is taken.

⁵ Link: <http://www.hightech-strategie.de/en/index.php>

⁶ 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.

The intended forest convention is to lay down common objectives and a binding framework for forest management, the reconciliation of the various interests in forest policy and strengthened cross-border cooperation. The future convention is expected to boost sustainable and multifunctional forest management in the pan-European region and beyond.

2.9 Forest Climate Fund

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 joint responsibility of the Federal Ministry of Food, Agriculture and Consumer Protection and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

Due to carbon storage, build-up of carbon stocks in forests and the prevention of 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. The Federal Ministry of Food, Agriculture and Consumer Protection and the Federal Ministry for the Environment therefore regard it as a necessity to promote measures aimed at tapping the potential of forests and timber for CO₂ reduction and energy generation 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.

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,
- Increasing of carbon storage in wood products 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 forest management and forest products certification

The basic standards for securing the sustainable management of German forests are set by the Federal Forest Act. This legal framework outlines the main guidelines which are specified, giving due consideration to the typical regional-forest and forest-ownership patterns, by respective regulations at Laender-level.

Additionally, about 70 % (2012) of the total forest area has been voluntarily certified so far, including 7.4 million ha forests certified according to PEFC criteria (Programme for the Endorsement of Forest Certification Schemes) and about 600,000 ha according to FSC criteria (Forest Stewardship Council). The Federal Government supports this initiative and is backing the further development, harmonization and mutual recognition of the competing certification systems. It takes the view that wood and wood products may only be procured from stocks with credible certificates. In accordance with this procurement regime, wood products procured by the Federal Administration must demonstrably come from legal and sustainable forest management. The regulation was renewed in January 2011 and is now valid without any time restrictions⁷.

3.2 Sustainable and legal wood-trading policies

An important initiative at international level is the EU-FLEGT (Forest Law Enforcement, Governance and Trade) Action Plan on Illegal Logging, representing a joint-action programme against illegal logging. The Federal Government is backing preparations and negotiations with potential candidate countries of voluntary FLEGT partnership agreements (VPA) with the EU.

The EU-FLEGT approach is supplemented by the EU 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 the 3rd of March 2013.

⁷ Internet-link to the joint instruction and related explanatory notes:

<http://www.bmelv.de/SharedDocs/Standardartikel/EN/Agriculture/forestTimberHunting/ProcurementRulesWoodProducts.html>)

Work on improved methods for timber origin identification (genetic and isotopic fingerprinting methods) continues. Germany initiated an international project with ITTO to implement these methods in the Congo Basin (which started last year) and another project with Biodiversity International to establish an international facility in Malaysia in order to coordinate all related work (which started in 2011). Countries and organizations are invited to participate in these projects!

In March 2013 the Thünen Centre of Competence on the Origin of Timber was founded. The competence centre is a central contact facility for government agencies, the timber trade, consumers and associations to verify the species of wood and/or wood products and their origin. The competence centre is able to determine wood samples accurately at the genus or species level and can check claims on the geographical origin of an increasing number of tree species. Certificates (e.g. FSC, PEFC or comparable certificates, verification of legal compliance) can be checked concerning validation and eligibility in terms of the EUTR. Wood trade flows and wood markets are continuously being analyzed to provide information about countries and products at particular risk concerning illegal logging.

3.3 Impacts of carbon market - The greenhouse gas balance of the German forest and wood sector

With the decisions of the climate conference in Durban at the end of 2011, the Kyoto Protocol was extended for a second commitment period until 2020. Thereby, a number of changes have been introduced to the rules for estimating the emissions and removals of emissions associated with the forest and wood sector, which is reported in the sector land use, land-use change and forestry (LULUCF). This includes inter alia the mandatory accounting of forest management and the consideration of carbon storage in wood products through the material use of wood.

Following the requirements of the regulatory framework adopted by the international community, initial estimates for the material use of wood in Germany amount the annual net effect of delayed biogenic carbon emissions to about 18 Mt CO₂ on average for the years 2005 to 2009. This includes the product categories sawnwood, wood based panels and paper and paperboard. Adding also the average CO₂ balance of forests for this period, the total storage effect sums up to 38 Mt CO₂ in recent years.

In addition to an improved coverage of actual emission patterns associated with the material use of wood, the consideration of carbon storage in wood products in the Kyoto Protocol contributes to promote associated substitution effects. The manufacturing of wood products is

often connected with less greenhouse gas emissions than alternative product systems with the same functions made from other materials. Although this effect is always subject to strong fluctuations depending on the respective products, on average, a material substitution effect amounting to 1.9 Tons CO₂eq per one m³ of wood can be achieved.

In Germany, almost twice as many emissions as with the substitution of fossil fuels by the use of energy wood have thus been avoided in recent years. Taking into account also the effect of the domestic forest and wood sector as a carbon reservoir with its natural sink function, the greenhouse gas balance of the sector amounts to -125 Mt CO₂eq per year. This means that without the sectors' contribution (carbon sink and storage, energy and material substitution), Germany's emissions would have been about 16 % higher.

3.4 Wood demand and raw material potential

Germany has 11.1 million hectares of forests (31 % of territory) which have been sustainably managed for about 300 years. The fact that increment (average of about 11 m³/ha) has been higher than the amount of removals has led to the creation of substantial timber stocks (3.4 billion m³; average about 330 m³/ha). This has resulted in an additional accumulation of some 700 million m³ since 1986. Forests play the key role in timber and fuelwood supply, which has increased significantly during the past decade. Besides timber demand, this is mainly due to the renaissance of bioenergy with woody biomass as the most important raw material source.

Renewable raw materials like timber and woody biomass offer significant opportunities to mitigate the effects of climate change, secure supply and promote economic development. CO₂ is sequestered not only while trees grow, but also stored in timber products. Every cubic meter of timber removes about 1 ton of CO₂ from the atmosphere and stores it in the form of carbon, in some cases over many decades. Sustainable material use of timber is favourable 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.

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 protec-

tion targets 2020 and beyond (“bio-based economy”), some studies expect a shortage in timber supply⁸⁹.

Depending on the degree of mobilisation 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 favourable 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.

3.5 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 is expected due to the economic development in general, rising energy prices and the political environment for the promotion of renewables.

The rising use of fuelwood in private households exacerbates raw material competition, especially in respect of the availability of softwood. According to current evaluations, nearly 34 million cubic metres of wood resources (this figure has tripled within 10 years) and thereof 22 million cubic metres of split logs directly from forests were used for energy generation in private households (2010)¹⁰. 9.5 million cubic meters of softwood were used in this context. This

⁸ 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.

⁹ The European Forest Sector Outlook Study EFSOS II

http://www.unece.org/fileadmin/DAM/timber/efsos/data/Country_profiles.pdf

¹⁰ Mantau U. (2012); Energieholzverwendung in privaten Haushalten 2010; INFRO Informationssysteme für Rohstoffe, Universität Hamburg

timber is, however, also partially in demand for use as a material (industrial roundwood, industrial wood). Consequently, the timber industry has had to face some regional bottlenecks in spruce supply over the past years. Ongoing demand resulted in some reduction of the respective timber stock in forests as well as in net imports of about 3.4 million m³ of roundwood.

Against this backdrop, momentum is increasing in the ongoing debates on maximum sustainable harvesting potential, the identification of wood resources being available for sustainable mobilisation and the growing competition between material and energetic use of timber. 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. One decisive question is to what extent German forests will be able to contribute to meet future demand without jeopardizing sustainability rules. Subsequently some arguments are listed, which are being considered in current forest policy discussion and represent major future challenges:

- In 2008 the overall audit of the National Forest Inventory Study of timber stocks, timber increment and cutting shows that, from 2002 to 2008, approximately 10 % more timber was grown than was felled and that growing stock rose by 2 %. However, in the case of spruce, which is, in terms of quantity and for the profitability of the forest sector, the most important tree species, stock reduction occurred (harvesting and forced felling exceeded growth by 32 %). A high utilisation rate has thus already been achieved throughout Germany.
- 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 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.
- 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.
- The forest policy target of "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 set-

ting-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 largely beyond forest policy control.

- 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 joint beneficiaries under a will, 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 have so far championed close-to-nature silviculture with a high proportion of hardwood and long rotation periods.
- An appreciable expansion of the forest areas is hardly to be expected in view of the competition for use posed by settlement and traffic areas, the production of food and agrarian raw materials. This applies equally to short-rotation plantations.
- 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.

3.6 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 such a principle, 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 is to aim at striking a resilient balance between differing interests and growing demands made on forests and their sustainable performance.

The National Forest Strategy 2020¹¹, 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 (in the strategy 9 main areas of action and related subordinated goals are identified).

The areas of action range from silvicultural approaches to measures for timber mobilisation, intensification of “cascaded use of wood”, increase the 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.

Research and development represent another key element in the implementation of this strategy. Via the Agency for Renewable Resources, the Federal Ministry of Food, Agriculture and Consumer Protection provides funding for a large number of projects under the Renewable Resources Funding Programme¹². These projects are inter alia targeted at increased timber

¹¹ Link:

http://www.bmelv.de/SharedDocs/Downloads/EN/Publications/ForestStrategy2020.pdf;jsessionid=453FF007C448188F61100C6177A3C37E.2_cid296?_blob=publicationFile

¹² Link: <http://international.fnr.de/index.php?id=152>

mobilisation and efficient use of wood (tapping additional potential through fast-growing tree species, pilot plant lignocellulose 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 resources¹³ that are also currently being put into practice.

4. Development in forest products sectors

4.1 Wood raw materials

An overview of supply and use of all wood raw materials is provided in the wood resource balance (Table 4). It shows the relevance of the different assortments of wood raw materials for satisfying the demand for material and energetic use. The following table reveals the developments which have taken place in the period 2000 to 2010.

Total supply and use of wood raw materials increased about 55 million m³ in the period 2000 to 2010. Supply of primary wood raw materials from forests increased about 30.6 million m³. This increase is mainly driven by higher demand of sawlogs for the sawmill industry and higher demand of other roundwood (fuel wood) for private households and firing plants. Energetic use of wood resources accounts to 47% of the total wood resource use in 2010. A significant increase can also be stated for the supply of post consumer wood. The major share of the increased supply is used by large-scale firing plants, while the material use of post-consumer wood in the panel industry for the production of particle boards remains on a quite constant level.

¹³ Link

http://www.bmelv.de/SharedDocs/Downloads/Broschueren/AktionsplanNaWaRo.pdf?__blob=publicationFile

Table 4: Wood resource balance Germany 2000 and 2010

Supply	Wood Resource Balance			Wood Resource Balance			Use
	2000	2010	Δ	2000	2010	Δ	
	mill. m ³			mill. m ³			
Sawlogs	30,3	37,3	7,0	30,3	37,3	7,0	Sawmill industry
Other roundwood	17,8	36,5	18,7	14,3	16,9	2,6	Pulp industry
Forest residues	3,1	8,0	4,9	7,2	10,6	3,4	Panel industry
Bark	3,6	4,7	1,0	3,7	2,3	-1,4	Other material uses
Landscape care wood	1,9	4,5	2,6	0,4	4,6	4,3	Solid wood fuels
Short rotation coppice	0,0	0,0	0,0	8,6	22,6	14,1	Large-scale firing plants (≥ 1MW)
saw mill by products	11,5	15,0	3,5	4,3	7,2	2,9	Small-scale firing plants (< 1MW)
Other industrial residues	3,9	5,8	1,8	12,0	33,9	21,9	Private households
Black liquor	2,0	3,6	1,6	0,0	0,1	0,1	Other energetic uses
Post consumer wood	5,5	14,0	8,4	0,0	0,0		Balance adjustment
Solid wood fuels	0,4	4,6	4,3				
Balance adjustment	0,7	1,5					
total	80,8	135,4	54,6	80,8	135,4	54,6	total

Source: Mantau, U. (2012): Holzrohstoffbilanz Deutschland : Entwicklungen und Szenarien des Holzaufkommens und der Holzverwendung von 1987 bis 2015. Hamburg: Universität Hamburg, 65 p

With the exception of the categories roundwood, wastepaper and value-added products (including furniture), German timber trade is characterized by net export surpluses (quantitative) since 2004. Due to high imports of coniferous roundwood there was a roundwood net import surplus in 2012 of about 3.4 million m³.

4.2 Roundwood markets

The domestic use of roundwood is 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 about 90 % softwood and only 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 2012 about 52 million m³ were felled (minus 6.8 % compared with 2011). The species group “spruce” accounted for 48 % of the total felling, “pine” for 25 %, “beech” for 23 % and “oak” for 4 %. Comparing the development of felling in recent years with German forest resource assessment data clearly show that in comparison

with potential coniferous wood resources (in particular potential resources of spruce) in hardwood there is still considerable untapped potential.

The official felling statistics (2012: 52.3 million m³ commercial volume under bark, average of the last decade: about 56 million m³) do not completely cover the volumes, harvested in the forest (Table 5). Especially removals in enterprises managing smaller forest areas (*inter alia* registration problems) and fuelwood consumption are underestimated (it is particularly unlikely that the use of forest residue volumes is fully recognized).

Table 5: Comparison between official felling statistics, WEHAM potential and estimates of use in million m³ of solid wood under bark per year (after deduction of harvesting losses)					
Year	Wood harvest according to official felling statistics	Timber harvest potential according to the WEHAM basic scenario Federal Forest Inventory	Estimate of felling		
			Inventory Study 2008	Thünen Institute of International Forestry and Forest Economics	University of Hamburg
2002	42,4			48.5	47.5
2003	51,2.	70.9	70.5	52.5	51.5
2004	54.5	70.9	70.5	59.0	54.6
2005	56.9	70.9	70.5	66.3	62.4
2006	62.3	70.9	70.5	69.6	
2007	76.7	70.9	70.5	76.7	73.3
2008	55.4	78.4	70.5	64.1	71.9
2009	48.1	78.3		61.3	
2010	54.4	78.3		67.7	73.8
2011	56.1	78.3		68.2	
2012	52,3	78.3		66.6	

Source: BMELV, Thünen-Institute

In order to provide more realistic accounts of harvesting volumes additional methodological approaches can be used. Results from the Forest Inventory Study 2008 estimate the average annual harvest in the period 2003 to 2008. The Federal Forest Inventory allows at a ten-year interval the determination of felling and verifies the derivation on the demand side. In 2015,

new data from the ongoing third Federal Forest Inventory will, for the first time for the entire German forest area, allow a detailed verification of timber use in forests broken down by the Laender and categories of forest ownership.

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 3.8 million and a gross value added of 400 billion euros, it is among the most important sectors in the national economy. In Germany there are about 16 million buildings, of which 80 % are older than 25 years. This means a huge dormant potential to be mobilized.

Since the first Thermal Insulation Ordinance entered into effect in 1978 the energy efficiency of buildings has been improved step by step. In spite of this many buildings still do not meet any energy saving requirement. Building owners and tenants increasingly realise that energy saving is not only an environmental issue but also most interesting in economic terms. For example, the cost for heating and hot water make up around 87 % of total energy consumption of private households. 80 % of those costs could be saved by professional refurbishment such as improvements in building shells, energy efficiency and modern building services.

Important incentives for investments in the building sector besides the Renewable Energies Heat Act is the development of a German Green Building Certificate in close cooperation between the Federal Government and research institutions and interested associations. The first German Sustainability Certificates were granted to office buildings in January 2009¹⁴. Ecological advantages of sustainable wood products may open up new perspectives within the building sector, especially in respect of modernization and renovation. However, thanks to advanced insulation technology, low-energy buildings are in general independent of construction material (timber, concrete etc.). This means intensified competition between construction materials and a constant need for innovation.

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

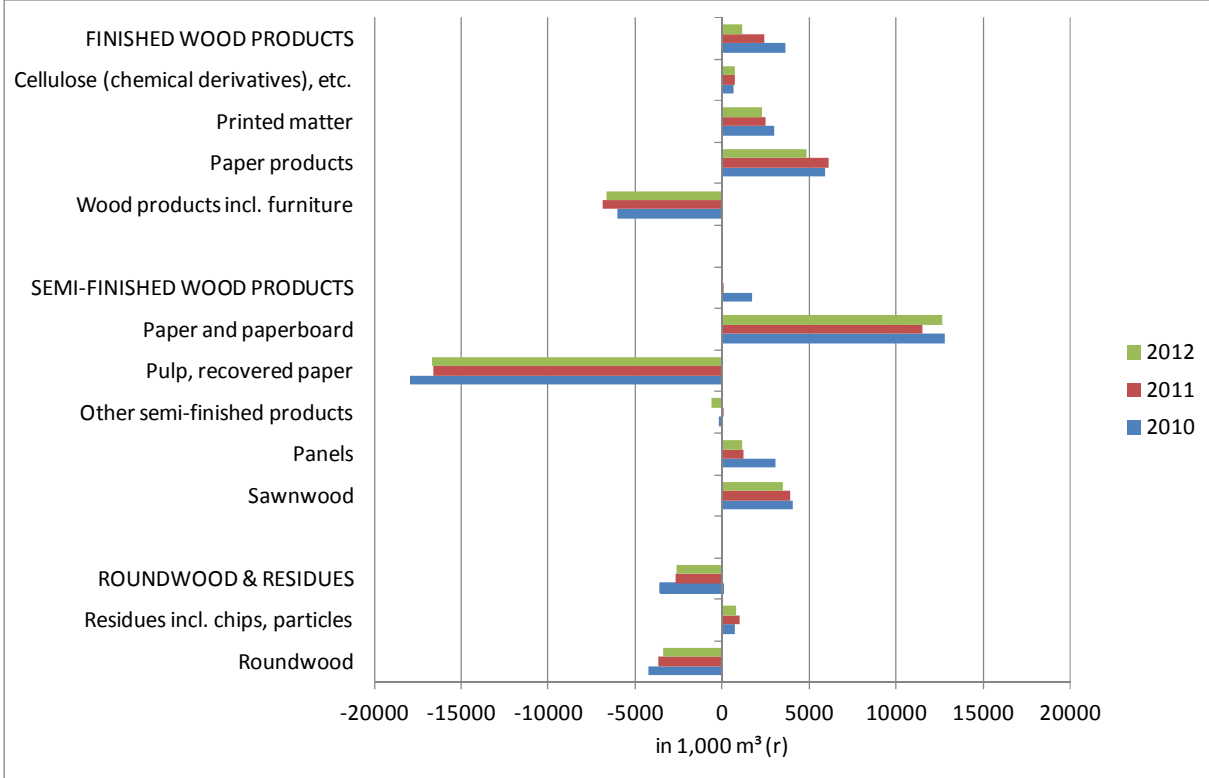
German trade with wood and wood based products showed in the period 2010 to 2012 a change from net exporter to net importer, measured in roundwood equivalents (m³ (r)). In

¹⁴ further information: www.nachhaltigesbauen.de ; www.dgnb.de

2010 net export were about 1.8 million m³ (r). In 2011 trade of wood and wood based products was almost balanced with net imports of 0.1 million m³ (r). This trend continued to a net import of 1.6 million m³ (r) in 2012. In monetary terms, however, exports show a surplus in all recent years. In 2010 net exports of 7.9 billion Euros of wood and wood based products could be achieved. 2011 shows a slight increase to 8.2 billion Euros. In 2012 the value of net exports decreased to 7.1 billion Euros.

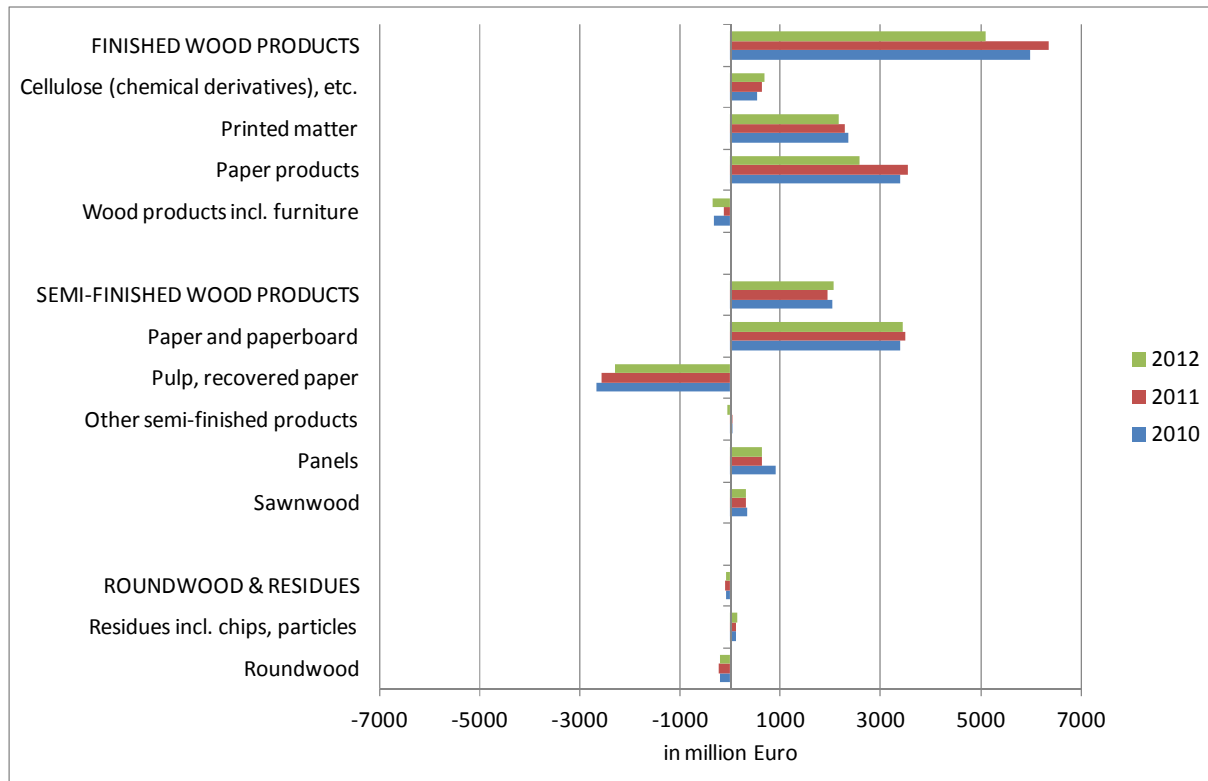
The following figures 2 and 3 show the German trade balance of wood and wood based products of different product groups in the years 2010 to 2012 in million m³ (r) (figure 2) and in 1,000 million Euros (figure 3).

Figure 2: Trade balance of product groups of wood and wood based products 2010 to 2012 (in 1,000 m³ (r))



Data source: Statistisches Bundesamt, calculated by Thünen Institute

Figure 3: Trade balance of product groups of wood and wood based products 2010 to 2012 (in million Euros)



Data source: Statistisches Bundesamt, calculated by Thünen Institute

The main product group of roundwood and residues shows net imports in the period considered. Within this main group the products have significantly different trade balances. While roundwood shows net imports, residues have an export surplus. Trade with semi-finished wood products is nearly balanced in 2011 and 2012, measured in roundwood equivalent (m³ (r)), while there was a net export in 2010. In monetary values semi-finished wood products achieved an annual export surplus of about two billion Euros. Within this main product group, pulp and recovered paper show significant net imports. 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 in the period 2010 to 2012.

4.4 Sawnwood (softwood/hardwood)

In 2012, about 18,521 people were employed in the German sawmilling industry (- 3.8 % against 2011). The total turnover amounted to 5.3 billion euros (change from previous year:

- 5.2 %). With an export quota of 26.5 %, the export turnover amounted to 1.4 billion euros. Compared with 2011, the entire export turnover decreased by 8.0 % (companies with 20 and more employed persons).¹⁵

With about 20.0 million m³, the domestic production of sawn softwood (sawnwood coniferous) decreased by 7.4 % in 2012 compared with 2011. The apparent consumption of coniferous sawnwood was estimated to 17.8 million m³ (- 6.1 % compared with 2011). German exports of sawn softwood amounted to 6.1 million m³ and the imports to 3.9 million m³ in 2012. The annual apparent consumption of sawn hardwood amounted to 0.9 million m³ which shows a slight increase of 0.6 % compared to 2011. The domestic production also increased slightly about 0.3 % and is still at a level of 1.0 million m³ of sawn hardwood.

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

In 2012, the German panel industry employed approximately 12,782 people (0.3 % against 2011) and recorded a total turnover of 4.6 billion euros. Compared with 2011, the total turnover decreased by 0.8 %. About 32.0 % of the turnover depended on foreign trade (1.5 billion euro). Compared with 2011, the entire export turnover decreased by 6.3 % (companies with 20 and more employees)¹⁶. The annual production of the German panel industry amounted to 6.8 million m³ of particle boards (including OSB) and to 5.1 million m³ of fiberboards. The apparent consumption of particle boards (including OSB) was estimated to be 7.3 million m³ (- 0.9 % compared with 2011) and of fibreboards to be 2.7 million m³ (+ 23.2 % compared with 2011).

4.6 Pulp and paper

In 2012, approximately 38,087 people were employed in the German pulp and paper industry (- 2.0 % compared with 2011) at about 180 production sites (- 1.1 % against 2011). The total turnover amounted to 16.4 billion euro (change from previous year: - 7.1 %). With an export quota of 53.1 %, the export turnover amounted to 8.7 billion euro. Compared with 2011, the entire export turnover decreased by 3.0 % (companies with 20 and more employed persons)¹⁷. The annual production amounted to 22.6 million tons (- 0.3 % against 2011)¹⁸, comprising 3,000 different varieties of paper. The apparent consumption of graphic papers, papers and

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

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

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

¹⁸ VDP (2012): Paper 2012: Annual Report. Tab. N2; N8; N16, N18)

boards for packaging, sanitary and household papers and other papers and board in total was calculated to be 20.0 million tons (- 1.1 % compared with 2011). Wood consumption by German pulp and paper mills was estimated to be 10.4 million m³ in 2012, which is a minus of 2.7 % compared with 2011¹⁹.

4.7 Pellet industry

German producers of wood pellets benefited from growing demand for renewable energy generation. Producing 0.3 million tons in 2005 (of which domestic consumption was about 0.2 million tons) it was possible to increase production to 2.2 million tons in 2012 (plus 19.7 % compared to 2011). About 1.3 million tons have been exported in 2012. Hence, consumption remains on a much lower level than production: 1.3 million tons in 2012, a plus of 21.3 %. So far main raw material sources for pellet production are wood residues originating from softwood sawmills. In future, additional sources may become important (e.g. residues from forests, fast growing species, hardwood species).

4.7 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 approximately 152,532 people in 2012 (+1.1 % compared with 2011). 50,217 of these were employed in the woodworking industry, 102,315 in the furniture industry. The total turnover amounted to 26.7 billion euro, an increase of 2.4 % compared with 2011. The increase in the furniture industry was lower (1.6 %) than in the woodworking industry (4.1 %). However, the turnover of the furniture industry is still higher (18.0 billion euro) than the turnover of the woodworking industry (8.7 billion euro). With an export quota of 23.5 %, the export turnover amounted to 6.3 billion euro. The export quota of the furniture industry is considerably higher than the export quota of the woodworking industry (27.2% compared to 16.0 %). The export quota remains nearly at the same level as in 2011. A slight increase can be stated for the furniture industry (+ 0.1 %).

¹⁹ VDP (2012): Paper 2012: Annual Report. Tab. N2; N8; N16, N18)

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



TF1
UNECE TIMBER FORECAST QUESTIONNAIRE
Roundwood

Country: Germany	Date:
Name of Official responsible for reply:	
Official Address (in full):	
Telephone:	
Fax:	
E-mail:	

Product Code	Product	Unit	Historical data		Revised	Estimate	Forecast
			2011	2012	2012	2013	2014
1.2.1.C	SAWLOGS AND VENEER LOGS, CONIFEROUS						
	Removals	1000 m ³	25.497	23.457		26.100	27.600
	Imports	1000 m ³	4.791 #	4.500 #		4.000	4.000
	Exports	1000 m ³	1.683 #	1.700 #		1.100	1.100
	Apparent consumption	1000 m ³	28.604	26.257		29.000	30.500
1.2.1.NC	SAWLOGS AND VENEER LOGS, NON-CONIFEROUS						
	Removals	1000 m ³	3.520	3.175		3.150	3.200
	Imports	1000 m ³	140 #	150 #		150	150
	Exports	1000 m ³	750 #	750 #		800	800
	Apparent consumption	1000 m ³	2.909	2.575		2.500	2.550
1.2.1.NC.T	of which, tropical logs						
	Imports	1000 m ³	26 #	25 #		16	16
	Exports	1000 m ³	5 #	5 #		2	2
	Net Trade	1000 m ³	21	20		14	14
1.2.2.C	PULPWOOD (ROUND AND SPLIT), CONIFEROUS						
	Removals	1000 m ³	9.288	8.900		9.000	9.000
	Imports	1000 m ³	1.892 #	2.000 #		2.000	2.000
	Exports	1000 m ³	757 #	800 #		800	800
	Apparent consumption	1000 m ³	10.423	10.100		10.200	10.200
1.2.2.NC	PULPWOOD (ROUND AND SPLIT), NON-CONIFEROUS						
	Removals	1000 m ³	3.962	4.310		4.300	4.300
	Imports	1000 m ³	399 #	400 #		300	300
	Exports	1000 m ³	362 #	350 #		250	250
	Apparent consumption	1000 m ³	3.998	4.360		4.350	4.350
3	WOOD RESIDUES, CHIPS AND PARTICLES						
	Domestic supply	1000 m ³	13.133 C	12.098 C		12.400	12.900
	Imports	1000 m ³	3.503 C	3.138 C		3.100	3.100
	Exports	1000 m ³	3.815 C	3.097 C		3.000	3.000
	Apparent consumption	1000 m ³	12.821	12.138		12.500	13.000
1.2.3.C	OTHER INDUSTRIAL ROUNDWOOD, CONIFEROUS						
	Removals	1000 m ³	1.659	1.579		1.600	1.600
1.2.3.NC	OTHER INDUSTRIAL ROUNDWOOD, NON-CONIFEROUS						
	Removals	1000 m ³	1.433	1.442		1.400	1.400
1.1.C	WOOD FUEL, CONIFEROUS						
	Removals	1000 m ³	5.266	4.529		5.000	5.200
1.1.NC	WOOD FUEL, NON-CONIFEROUS						
	Removals	1000 m ³	5.517	4.947		5.300	5.500

Please return (preferably by e-mail) to Timber Section no later than 31 October 2013.

By e-mail to stats.timber@unece.org. By fax to +41 22 917 0041

Questions? Please contact Anvar Nigmatov 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 Committee Forecast (#). 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.



TF2
UNECE TIMBER FORECAST QUESTIONNAIRE
Forest products

Country: Germany	Date:
Name of Official responsible for reply:	
Official Address (in full):	
Telephone:	
Fax:	
E-mail:	

Product Code	Product	Unit	Historical data		Revised 2012	Estimate 2013	Forecast 2014
			2011	2012			
5.C	SAWNWOOD, CONIFEROUS						
	Production	1000 m ³	21.633	20.032		20.000	21.000
	Imports	1000 m ³	4.090	3.866		3.800	4.000
	Exports	1000 m ³	6.794	6.118		6.100	6.400
	Apparent consumption	1000 m ³	18.929	17.780		17.700	18.600
5.NC	SAWNWOOD, NON-CONIFEROUS						
	Production	1000 m ³	996	999		1.030	1.060
	Imports	1000 m ³	489	446		450	450
	Exports	1000 m ³	623	578		620	660
	Apparent consumption	1000 m ³	861	866		860	850
5.NC.T	of which, tropical sawnwood						
	Production	1000 m ³	9 N	6 N		5	5
	Imports	1000 m ³	124	105		100	95
	Exports	1000 m ³	54	47		45	40
	Apparent consumption	1000 m ³	79	64		60	60
6.1	VENEER SHEETS						
	Production	1000 m ³	187 C	127 C		125	125
	Imports	1000 m ³	123 C	116 C		115	115
	Exports	1000 m ³	82 C	66 C		65	65
	Apparent consumption	1000 m ³	228	177		175	175
6.1.NC.T	of which, tropical veneer sheets						
	Production	1000 m ³	0 N	0 N		0	0
	Imports	1000 m ³	25	27		25	25
	Exports	1000 m ³	10	8		10	10
	Apparent consumption	1000 m ³	15	19		15	15
6.2	PLYWOOD						
	Production	1000 m ³	218 C	178 C		150	130
	Imports	1000 m ³	1.423 C	1.334 C		1.200	1.200
	Exports	1000 m ³	355 C	296 C		150	140
	Apparent consumption	1000 m ³	1.285	1.215		1.200	1.190
6.2.NC.T	of which, tropical plywood						
	Production	1000 m ³	17 N	17 N		15	15
	Imports	1000 m ³	163	143		140	140
	Exports	1000 m ³	48	41		40	40
	Apparent consumption	1000 m ³	132	119		115	115
6.3	PARTICLE BOARD (including OSB)						
	Production	1000 m ³	6.940 N	6.838 N		6.500	6.500
	Imports	1000 m ³	2.649	2.624		2.300	2.200
	Exports	1000 m ³	2.251	2.130		2.100	2.000
	Apparent consumption	1000 m ³	7.339	7.333		6.700	6.700
6.3.1	of which, OSB						
	Production	1000 m ³	1.140	1.167		1.150	1.150
	Imports	1000 m ³	426	413		450	450
	Exports	1000 m ³	548	493		500	500
	Apparent consumption	1000 m ³	1.019	1.088		1.100	1.100
6.4	FIBREBOARD						
	Production	1000 m ³	4.748 C	5.063 C		5.100	5.000
	Imports	1000 m ³	930 C	1.186 C		1.060	1.060
	Exports	1000 m ³	2.994 C	2.944 C		2.700	2.700
	Apparent consumption	1000 m ³	2.683	3.305		3.460	3.360
6.4.1	Hardboard						
	Production	1000 m ³	2.028	2.297		2.300	2.300
	Imports	1000 m ³	189	179		180	180
	Exports	1000 m ³	1.178	1.330		1.300	1.300
	Apparent consumption	1000 m ³	1.039	1.146		1.180	1.180
6.4.2	MDF (Medium density)						
	Production	1000 m ³	1.542 N	1.478		1.450	1.380
	Imports	1000 m ³	464	394		400	400
	Exports	1000 m ³	1.695	1.266		1.250	1.200
	Apparent consumption	1000 m ³	311	606		600	580
6.4.3	Other fibreboard						
	Production	1000 m ³	1.177 N	1.288		1.350	1.320
	Imports	1000 m ³	277	613		480	480
	Exports	1000 m ³	121	348		150	200
	Apparent consumption	1000 m ³	1.333	1.552		1.680	1.600
7	WOOD PULP						
	Production	1000 m.t.	2.725 C	2.636 C		2.640	2.640
	Imports	1000 m.t.	4.967 C	4.665 C		4.660	4.660
	Exports	1000 m.t.	1.078 C	1.114 C		1.110	1.110
	Apparent consumption	1000 m.t.	6.614	6.187		6.190	6.190
10	PAPER & PAPERBOARD						
	Production	1000 m.t.	22.706 C	22.630 C		22.600	22.650
	Imports	1000 m.t.	11.032 C	10.931 C		10.900	10.800
	Exports	1000 m.t.	13.483 C	13.523 C		13.500	13.500
	Apparent consumption	1000 m.t.	20.255	20.038		20.000	19.950

Please return (preferably by e-mail) to Timber Section no later than 31 October 2013.

By e-mail to stats.timber@unece.org. By fax to +41 22 917 0041

Questions? Please contact Anvar Nigmatov 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 Committee Forecast (#). 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.