Forest-based Sector
Technology Platform

Horizons - Vision 2030
for the European Forest-based Sector

Vision
2030

THE EUROPEAN FOREST-BASED SECTOR TECHNOLOGY PLATFORM

eustafor CEI-Bois cepi CEPF

Vision 2030
10 Vision Targets for 2030

Strategic Research & Innovation Agenda 2020
Main Document - Addressing Horizon 2020

Strategic Research & Innovation Agenda 2020 - Annex
Strategic Themes and Research & Innovation Areas

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Preface

Seven years ago, the European forest-based sector set out a bold vision for its future development up to 2030. With the support of the European Commission, the industry and its major stakeholders created the Forest-based Sector Technology Platform (FTP), which developed a Strategic Research Agenda (SRA) to provide a roadmap for achieving this FTP Vision 2030. More than 100 European sector-relevant research projects, with a total funding of around € 500 million, were established between 2007 and 2011.

The sector has now renewed its Vision 2030. The vision supports the EU's Europe 2020 strategy for smart, sustainable and inclusive growth and identifies four Strategic Themes to address the 'grand societal challenges', as described by the European Commission, and drive towards the development of a biobased society: the forest-based sector in a biobased society, responsible management of forest resources, creating industrial leadership and fulfilling consumer needs.

The vision can be summarised in three statements:

- The forest-based sector is a key actor in and enabler of the biobased society
- Consumer needs and the smart and sustainable use of forest resources are the cornerstones of development in the sector
- The sector is bustling with new entrepreneurial activities that create employment and enrich the rural economy

The new targets for 2030 form the backbone of this new vision document. They are very ambitious, clearly defined and measurable objectives which can only be achieved by a collaborative European effort to create a strong, profitable industrial sector. This needs both to attract investors and provide society with solutions to environmental challenges, particularly related to water, air and soil pollution and climate change.

The *Renewed Vision 2030* and complementary *Strategic Research and Innovation Agenda 2020* should also attract young people to a career in the forest-based sector and be a stepping stone on the path to achieving the European Commission's ambitious target of 80% reduction in CO_2 emissions by 2050 (which the CEPI *Roadmap 2050 - towards a low-carbon bio-economy* addresses).

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Background – the challenge

The future will bring both challenges and opportunities. Global challenges include the demands that a growing population will make on global ecosystems, whose resilience is being tested by water, air and soil pollution. Based on present consumption rates, the supply of natural resources will fall increasingly short of demand. But resources are used very inequitably, and there are still many people, particularly in developing countries, who have yet to gain access to their fair share of the world's limited resources. Substantial improvements in resource efficiency are essential to guarantee a secure and sustainable future for all, while simultaneously tackling climate change, which is driven by the use of fossil resources.

The European forest-based sector is directly affected by climate change, competition for wood resources, changing consumer demands, increasing competition and the growing complexity of manufacturing processes. Traditional forest-based industries have used non-food renewable natural resources in a sustainable and responsible way and this growing and evolving sector now has great potential as an enabler for a future sustainable European bioeconomy. The EU and the European forest-based sector can together contribute to achieving the Vision 2030 by implementing the revised Strategic Research and Innovation Agenda.

The development of a biobased economy will result in a growing importance of biomass resources, whilst the role of fossil resources is reduced. A biobased society will emerge that will embrace sustainability, a clean environment and low carbon solutions. The biobased society of 2030 will grow and develop from the seeds of the current bioeconomy. Addressing the challenges and opportunities and developing dedicated products, processes and solutions will require a paradigm shift from resource-based to knowledge-based industries and a 'new' forest-based sector with the following characteristics:

- The forerunner in a move away from an economy largely dependent on non-renewable resources, including fossil-based energy production, to a bioeconomy based on renewable raw materials
- Better resource efficiency, meaning less raw material and energy is needed to achieve the same or better outcome
- Green energy production from renewable resources that cannot be used as a raw material for products
- New and improved biobased products that will meet consumer needs and create new markets
- Responding to the ever-increasing environmental awareness of consumers

- Contrary to the commonly-held belief that using wood for economic exploitation causes the destruction of forests, sustainable management of forests in fact contributes to forest preservation
- Europe is the only world region to have seen a net increase in forest area over the past 20 years, having gained 16.9 million hectares of forest land since 1990
- The volume of timber in the EU forests is at its highest level since records began. The net annual increment in 2010 was 620 million cubic metres from which about 60% is harvested

(Source: FAO State of Europe's Forests 2011)

The forest-based sector today

The forest-based sector in Europe provides society with a wide variety of products and services, ranging from paper, packaging, tissue paper, furniture, carpentry and construction materials made from solid wood and wood-based panels to textile fibres, biofuels, bio-energy and specialist chemicals. Today it contributes some 8% of the EU's total manufacturing added value and sustainably manages forests covering 35% of the EU's landmass. It also provides income for about 16 million forest owners and supports 3-4 million industrial jobs in the areas of wood processing, transport, machinery, construction, instrumentation, ICT, chemicals and energy. The forest sector is Europe's biggest producer and user of biobased energy.

The most significant sub-sector of the forest-based industries in Europe is the woodworking industry which in 2009 had a turnover of over € 180 billion and 2.4 million employees in 365 000 small and medium-sized companies. The woodworking sector includes sawmilling (15%), wood construction products (37%) and furniture manufacture (48%).

The second largest sub-sector is the pulp and paper industry, with a total turnover of € 81 billion in 2010, employing 224 000 people in some 700 enterprises.

Healthy and resilient forests are a prerequisite for a sustainable supply of raw materials to the forest-based sector as well as for other goods and services provided for society by forest ecosystems (including carbon sequestration, clean water, erosion protection, biodiversity, aesthetic landscapes and recreation). The European forest-based sector has already practised sustainable forest management (SFM) for many centuries, and the concept continues to evolve. It operates mainly in rural areas and is a vital component of the rural economy.

Green energy and fuels from the forest-based sector

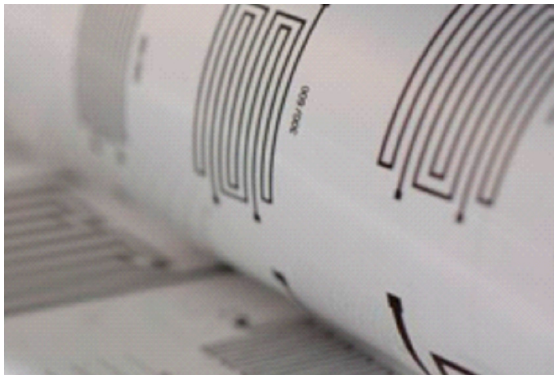
- As the world's leading provider of renewable energy solutions, including biofuels, the European pulp and paper industries are well-placed to be the main provider of biofuels from non-food feedstock also in the future

Wood is our most important renewable raw material for construction and furniture, because:

- Wood and wood products sequester carbon and reduce CO_2 in the atmosphere, helping to mitigate climate change
- Wood products are made in an established, low-energy production system, with minimal emissions
- Intermediate products from sawmills such as chips and sawdust are transformed into wood-based panels
- Wood products can be re-used and recycled, and at the end of their useful life they can be used for bio-energy

This cascade use of wood is particularly well implemented by the European pulp and paper industries. They are one of the major recyclers in Europe; 90% of newspapers and corrugated boxes are made from recycled fibres.

In the areas of biorefinery and nanotechnology the industry has already made substantial progress. Lignin remains an under-utilised material whose potential must be explored thoroughly in light of the latest technology.



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The forest-based sector incorporates the three pillars of sustainable development: economic efficiency, social acceptance and benefits and environmental performance. Mindful of the political, economic, environmental and social challenges which lie ahead, the sector will continue to use its diverse skills and considerable creativity to meet the needs of consumers and European society as a whole.

Sustainable forestry also prevents floods, reduces soil erosion and improves air quality. Last but not least, forests are the most species-rich of all terrestrial ecosystems. Managed with care and knowledge the forests of Europe offer renewable raw materials, as well as being a source of great biodiversity and recreational value for citizens. In fact, if all the forests in the world were managed as sustainably as those in Europe today, they would for a period be able to absorb most of the CO_2 emissions caused by humankind.

Nanocellulose

- Is nature's own "reinforcement steel"
- Is an incredible liquid absorbent
- In combination with certain biomaterials, nanocellulose exhibits other properties and can act as an impermeable water barrier

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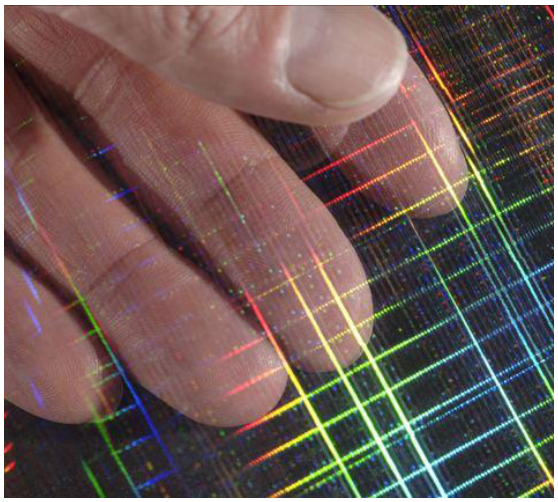
Lignin

- Is the second most abundant organic molecule in the world after cellulose
- Could be converted into a wide range of aromatic molecules

Forest-based sector Vision 2030

- The forest-based sector is a key actor in and enabler of the biobased society
- Consumer needs and the smart and sustainable use of forest resources are the cornerstones of development in the sector
- The sector is bustling with new entrepreneurial activities that create employment and enrich the rural economy

Focusing on innovation as a driver for the 'new' forest-based sector will provide society with renewable energy (heat, power and transport fuels), more sustainable wooden buildings and constructions and furnishings, replacing petroleum-based plastics in packaging and other applications, clean water technologies, future-oriented communication media, novel medicines and healthy food ingredients as well as alternative European raw materials for the production of clothing, to compete with current synthetic fibres and cotton.



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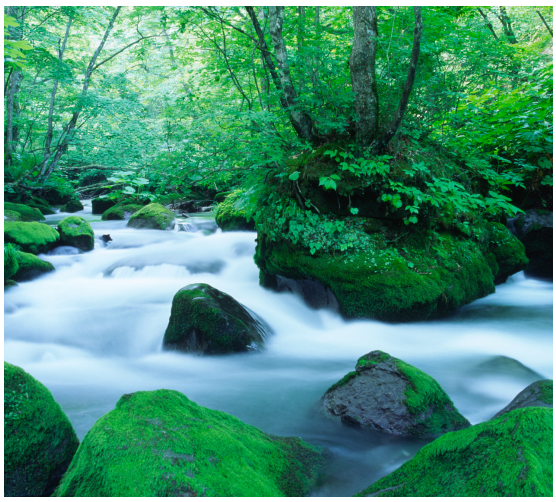

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The forest-based sector will also continue to provide society with a sustainably-managed forest, resilient to climate change. Only legally sourced wood will be used, whether imported or grown in the EU. The sector will significantly reduce CO_2 emissions by providing low carbon alternatives to energy-intensive materials.

Achieving this vision will help the EU in tackling several of the 'grand societal challenges' and greatly improve the competitiveness of the European forest-based sector. This will require excellence in forest and biomass management, significant investment in research and development and a strong, innovation-driven industry leadership. The forest-based sector is ready to take the lead.

Vision Targets 2030

The vision targets are grouped under four Strategic Themes that are essential for building a new forest-based sector in Europe by 2030. One of the themes, **'The forest-based sector in a biobased society'**, is cross-cutting. The other three respond to a specific set of vision targets. These three Strategic Themes and specific vision targets are:

Responsible management of forest resources

1. A resilient and diverse European forest is sustainably managed by a variety of owners and owner cooperatives who, assisted by new multi-purpose management systems, provide all the functions of the forest including raw material production, biodiversity and recreational opportunities.
2. In many regions specific forest growth is increasing and management is optimised for additional harvesting possibilities. In other regions, especially in the Mediterranean area, where the impact of climate change is predicted to be severe, creating resilient, stress-tolerant forest is particularly important. In some landscapes the main aim is nature conservation and providing ecosystem services. Bearing in mind the full range of demand and production constraints, harvesting possibilities in Europe have increased by 30%, enabling forest owners to manage their forests more efficiently and sustainably.
3. A cascade use of wood-based materials is established throughout the entire value chain. Recovery, reuse and recycling of forest-based products account for 70% of all recyclable material. When recycling opportunities have been exhausted, the remaining material is used for energy production.

Creating industrial leadership

4. Activities to foster resource efficiency have resulted in a significant reduction in specific energy consumption, specific raw material input and specific water use in the forest-based industries.
5. The forest-based sector is taking advantage of its long experience in biorefining to help the process achieve its full potential.
6. New business concepts based on forest ecosystem services have been developed on 30% of the land by forest owner cooperatives, in collaboration with sectors including agriculture, water and tourism.
7. Thanks to new and innovative production technologies, reduced overall energy consumption, increased recycling of wood and paper products, and reuse and refining of side-streams, the sector will continue to be the leading provider of green energy and the biggest producer of green electricity and biofuels in Europe, with a production capacity of 10 Mtoe per annum (equivalent to 50 Mm^3 of forest and mill residues) in 2030.

Fulfilling consumer needs

8. Wood-based construction in Europe has tripled its market share, from the 2010 level, reaching a turnover of € 200 billion, whilst the overall added value of the woodworking industries has doubled. Increased value will come from new products and services, as well as more widespread use of energy-saving modular housing structures and functional furniture.
9. The pulp and paper industry is well on its way to reaching the targets set out in the CEPI 2050 Roadmap. Novel and smart packaging solutions, integrated printed and digital products and innovative hygiene goods, for increased efficiency, value and safety have evolved.
10. Added value from new markets for non-wood forest goods (mushrooms, berries, clean water) and services (recreation, tourism, climate change mitigation) has increased ten-fold.

Achieving the Vision Targets – the revised Strategic Research and Innovation Agenda

Progress towards the renewed Vision 2030 will be achieved by implementing the revised Strategic Research and Innovation Agenda 2020. Strategic cross-sector alliances with other industries, investors and public institutions will play a vital role in the process. Open innovation concepts and methods that reach beyond the sector's usual technology providers, especially in the area of key enabling technologies (such as information and communication technologies (ICT), electronics, nanotechnology, sensor technologies and monitoring systems, advanced materials and advanced manufacturing systems, as well as industrial biotechnology) must be established to maintain the sector's competitive edge and accelerate the development towards a biobased society.

BENEFITS

To reach the goals of FTP's renewed Vision for 2030 and to take advantage of the potential opportunities to strengthen the sector's competitiveness, actions will be needed, in many areas:

- new business structures and models
- more beneficial policies and other political frameworks
- technological developments and increased investments in research and innovative solutions
- strengthened education and training
- creation of cross-sectoral alliances


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The technology platform serves as an important catalyst in all these areas, not least by bringing stakeholders together to achieve common goals.

ORGANISATION


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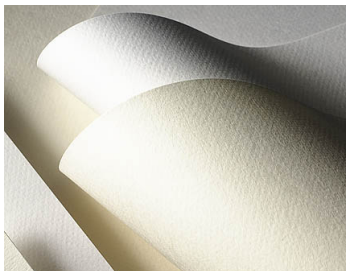
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The technology platform is run by the FTP Manager, with the High-level Group (HLG) as its decision-making body. At present, the HLG is comprised of representatives from six companies, four shareholder confederations and the chairman of the Advisory Committee. The European Commission (DG Research and Innovation and DG Enterprise and Industry) takes part in the HLG as an observer.

National Support Groups (NSGs) are an important element of the organisational structure. NSGs are currently active in 19 EU countries, plus Norway, Switzerland and Russia. The NSGs serve as coordinators for local business and research bodies, national authorities and funding agents. They have a key role in securing national support for the platform. The NSGs and federation representatives from core stakeholders take part in regular FTP Advisory Committee meetings.

The European Technology Platform for the Forest-based Sector is recognised by the European Commission

Additional information on research and innovation in the European Union can be found on the Commission site: http://ec.europa.eu/research/index.cfm

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