Enabling the bio-economy

the future has begun
A strong European bio-economy will make a significant contribution to Europe’s competitive position in global markets, as well as to its low-carbon future. It will create wealth and jobs. But this cannot happen without the pulp and paper industry and its development into the forest fibre sector.
The European pulp and paper industry has confidence in the future. Our sector has an active part to play in Europe’s sustainable reindustrialisation. Our natural, renewable bio-based resources, our logistical expertise in moving these around, our paper recycling systems, fibre processing know-how and knowledge of wood and fibre chemistry all qualify our sector to become a major player in the bio-economy.

The way forward
The pathway to the sector’s growth is set out in the CEPI 2050 Roadmap towards a low-carbon bio-economy: the transformation of the pulp and paper industry into the forest fibre sector, delivering 80% CO₂ reduction and 50% value growth by 2050. This is a clear vision for the sector, defining where we want to go and how we will get there. Ours is one of the few sectors to have approached the future in such a comprehensive way.

The vision of the CEPI 2050 Roadmap has lined up the entire pulp and paper sector in the direction of growth and inspired companies from across the industry, regardless of their size, location, or the materials they produce. The transformation is already leading the sector to develop new business models within our existing industrial base, adding value and allowing new products to be created for new markets.

Hygiene and tissue products will enable an ageing population to grow older in comfort. Paper-based packaging brings solutions for the prevention of food waste. Graphic paper will remain a key platform for information and knowledge sharing.

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IN THE FIRST RANK OF THE BIO-ECONOMY

- Companies in our sector are already investing the cash generated from their traditional activities to become active players in the bio-economy in second generation biofuels, biochemicals and new bio-based materials.

- Pulp mills in many European countries are re-engineering their facilities to produce raw material for use in the pharmaceutical industry, in cosmetics and in food products. Fibre-based polymer film will soon meet the specifications for industrial applications that currently use fossil-based materials.

- Our paper machines can today produce substrates for printed electronic applications such as wall paper that filters electromagnetic waves from GSM or Wi-Fi signals.

- Recycling mills are turning their residues into many added-value products, such as feedstock for soft board or a branded mineral product with cement-like properties.
The primary requirement for achieving a successful industry transformation is to bring together sustainability and competitiveness. They are inherent in our make-up and fundamental to our vision.
The European industry accounts for 25% of the world’s pulp and paper production, with 20% of our production exported. This generates €18 billion in added value for the European economy and, in 2011, 4% of our turnover was reinvested in Europe. 50% of our sector is made up of medium-sized enterprises playing a vital role in Europe’s industrial make-up. Furthermore, 63% of the jobs we provide are in rural areas.

Sustainability is in our nature
Our operations are resource efficient and for decades we have decoupled our environmental impact from production increases. Furthermore, our raw material is renewable, recyclable and recycled. We are leaders in water management and in the production and use of renewable energy. More than half of our energy is powered by biomass. This signifies that we are generating 20% of all biomass-based energy in Europe, replacing 36 coal-based energy plants in the meantime.

We turn our waste streams into new resources. 70% of all the waste paper in Europe is used in new products, making our sector one of the largest players in the circular economy. The paper industry has reduced its fossil CO₂ emissions per tonne of paper produced by 41% since 1990. With 91% of our fibre raw materials coming from local sources we are embedded in the EU economy, while competing on global markets.

A model for the future
Pulp and paper production remain our core business but we can already demonstrate several successful examples of industrial symbiosis and business clusters.

A number of our mills are bio-refineries that also produce raw materials for other industries, as well as energy that is sold back to the grid. Some share energy generation and waste-water treatment facilities with neighbouring installations and use residues from them for their needs. One of our pulp mills is even Europe’s leading supplier of vanillin, a flavouring used in the food and ice cream industry!

**RIDING RESOURCE EFFICIENCY**

- A single industrial site can host the operations of five different companies benefiting from a saw mill’s by-products and residues: construction timber, pallets, wood chips for pulp, energy pellets, and energy production.
- A paper mill situated next to a baby food plant uses the excess nutrients from the baby food production for its own biological water treatment processes. Another plant provides the warm water for the local swimming pool and the heat for the local city.
- Resin from bio-based polylactic acid can encapsulate paper fibres to create a material as strong as wood, steel or hard plastics.

The pulp and paper industry’s European credentials are second to none. 91% of our raw materials are sourced in Europe, coming from responsibly managed European forests which are more abundant and healthier now than they were 40 years ago. Thanks to the efforts of Europe’s citizens, 57 million tonnes of paper is collected annually for recycling, enabling half the fibres now used in European papermaking to be recycled ones. The industry’s production equipment comes from large European companies and we do business with a variety of European-based chemical companies.
Although full implementation of the CEPI 2050 Roadmap will take 30 years, the roll-out has started. The industry is ready for the start up of Horizon 2020, the European Framework Programme for Research and Innovation that sets the principles and priorities for allocating funding for industrial projects.
The strategic objectives of Horizon 2020 include tackling the challenges of the responsible use and reuse of renewable resources, expanding the bio-economy, sustainable bio-energy, creating products and services to meet new consumer needs, and forging industrial leadership. The transformation of the pulp and paper industry is also about meeting these objectives.

For the bio-economy to meet European 2050 environmental targets, such as 80% CO₂ reduction, a step change in technology is required. European institutions and the industry must work together to develop it. Breakthrough technologies are called for - changes in the fuel mix, emerging technologies, or changes in society’s behaviour will not be enough. To achieve this, the EU Emission trading system has to deliver a double dividend – the funds to help industry change.

A new approach
The bio-economy requires brand new technologies, better ways of putting emerging technologies into action, and innovation in the application of existing technology. Only this will deliver the 50% increase in value set out in the CEPI 2050 Roadmap.

CEPI has taken a leading role in developing the proposal for a Bio-based Industries Public Private Partnership, involving a large number of pulp and paper companies working together with other major players in the bio-economy. The sector is also engaged in two European Innovation Partnerships - Raw Materials and Water. And we are running our own initiative to identify breakthrough concepts. Our Two Team Project puts two interdisciplinary teams in competition for a year to come up with innovative concepts, based on the current industry set-up, that will support the industry transformation over its two investment cycles to 2050 and deliver the targets of the CEPI 2050 Roadmap.

By maximizing the efficiency of our current processes, increasing our energy and raw materials gains, and delivering new products, we will generate the resources to invest in new growth areas.

The process has started
In fact, development of the bio-economy is already being financed by improvements in today’s pulp and paper production. This has resulted in the first of a number of new bio-products that include water-repellent fabrics, smart packaging and second generation biofuels. Future products will require the pooling of skills, technological know-how based on “cellulose value” and clusters outside the pulp and paper industry. This is already leading to alliances with other industrial sectors. The bio-economy offers our sector the strategic opportunity to capitalise on our value chain and optimise the resources we use.
Coherent policies and bold measures are needed to realign Europe’s industrial policy to encourage investment in new areas such as the bio-economy. The time for decisions is short.
In common with other industrial sectors, the pulp and paper industry needs a positive regulatory environment to attract the necessary investments to develop new sustainable technologies that deliver added-value products.

Past European industrial and environmental policy often appears to have been adopted with little assessment of its impact on industry competitiveness or growth. In the current economic climate, this “one size fits all” approach will not work, it needs to be sector-specific. The Commission must be consistent in applying “fitness checks” to assess the impact of its policies on different sectors.

A specific measure, for example eco-design, might be an incentive for our sector but a penalty for another. It is therefore imperative that European industrial policy takes a holistic view, focusing in a coherent way on the end result rather than on the sum of the detail.

**Focus on reality**

For this to happen, European policy-makers need to understand the reality of how our industry works - the processes we use, our value chains and our investment cycles. For example, the availability of raw materials is crucial to us, yet wood is currently being subsidised for use in energy generation and paper is being flown out of Europe for recycling. We need policy-makers to focus their attention on measures that will support our industry, such as dedicated policies for biomass supply and recycled materials.

The silo mentality must also be avoided. The Common Agriculture Policy can address the production of biomass residues for energy. The EU Emission Trading System should become an instrument for innovation that yields a double dividend, rather than solely a cost for industry. The perspective for new environmental requirements should be to deliver the relevant improvements yet leave room for future industry innovation and growth. What are needed are simple, coherent and stable policies that do not place unnecessary burdens on industry, allowing it to focus on growth.

**Better market conditions**

Too often in Europe we are faced with regulations that disadvantage our industry in global markets. While Europe is fully open to foreign products, approximately half of European paper exports face tariff barriers abroad. Furthermore, not only is the European market open but there is also weak enforcement of its import rules. The lack of rigour in the surveillance of the European paper market penalises the local industry for having complied with Europe’s often higher standards and legal requirements.

The importance of trade to European industry must be at the top of the political agenda. When the WTO cannot secure market access and fair competition, trade diplomacy has to become a priority. Industry in Europe needs a level playing field, so it can benefit from globalisation rather than be penalised for it.

> “THE FACTORIES OF THE NEAR-FUTURE WILL USE HIGHLY ENERGY AND MATERIAL EFFICIENT PROCESSES, EMPLOY RENEWABLE MATERIALS, AND ADOPT BUSINESS MODELS SUCH AS INDUSTRIAL SYMBIOSIS THAT ALLOW THE RECOVERY OF DISSIPATED HEAT AND ENERGY.”

European Commission, industrial policy communication “A contribution to growth and economic recovery”. 
Bold decisions
Our industry has already shown the opportunities offered by the new bio-economy. We ask European policy-makers to show their trust and take the decisions to make it a reality. 2050 may seem a long way off, but it is only two investment cycles for a capital-intensive industry such as ours. The time to act is now!
EU INDUSTRIAL POLICY: THE EUROPEAN PAPER INDUSTRY TICKS ALL THE BOXES

✔ We are an important part of the new industrial revolution.

✔ We are built on a strong European presence, while competing in global markets.

✔ We are modernising a traditional industrial base and entering new sectors.

✔ We are investing in research into advanced manufacturing technologies for clean production.

✔ We represent a large market for key enabling technologies.

✔ We supply the bio-based product markets.

✔ We have a skilled workforce with a large range of competences.
Enabling the bio-economy

The Confederation of European Paper Industries (CEPI) is a Brussels-based non-profit making organisation regrouping the European pulp and paper industry and championing this industry’s achievements and the benefits of its products.

Its collective expertise provides a unique source of information both for and on the industry; coordinating essential exchanges of experience and knowledge among its members, and with the industry stakeholders. Through its 18 member countries (17 European Union members plus Norway) CEPI represents some 520 pulp, paper and board producing companies across Europe, ranging from small and medium sized companies to multi-nationals, and 1000 paper mills. Together they represent 25% of world production.

November 2012

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