EU FOREST-BASED INDUSTRIES 2050:

CO_2 effect calculation supporting sector's vision of sustainable choices for a climate-friendly future

WHY A CO_2 EFFECT CALCULATION?

In 2019, the European Forest-based Industries (FBI), including the pulp, paper and other fibre-based product industries, the woodworking industries, the producers of furniture, the bio-energy sector and the printing industry, came together to present their vision of the European society in 2050[1] and the essential role that they can play, delivering on the carbon neutrality goal. In light of the climate crisis and following the European Green Deal set of proposals by the European Commission, Cepi released the study "Climate effects of the forest-based sector in the European Union"[2].

IPCC 4TH ASSESSMENT REPORT 2007

Mitigation options by the forestry sector include extending carbon retention in harvested wood products, product substitution, and producing biomass for bio-energy. This carbon is removed from the atmosphere and is available to meet society's needs for timber, fibre, and energy.

In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit.

IPCC[3] 1ST ASSESSMENT REPORT 1990. PRIMARY RECOMMENDATION ON FORESTS

Increase wood production and forest productivity by silvicultural measures and genetically improved trees, thus helping to increase the forest carbon sink, to meet increasing demand for wood **as well as to support replacement** of **fossil fuels and other materials by wood** and to avoid inappropriate land use conversion.

EUROPEAN FOREST DEVELOPMENTS 1990-2015

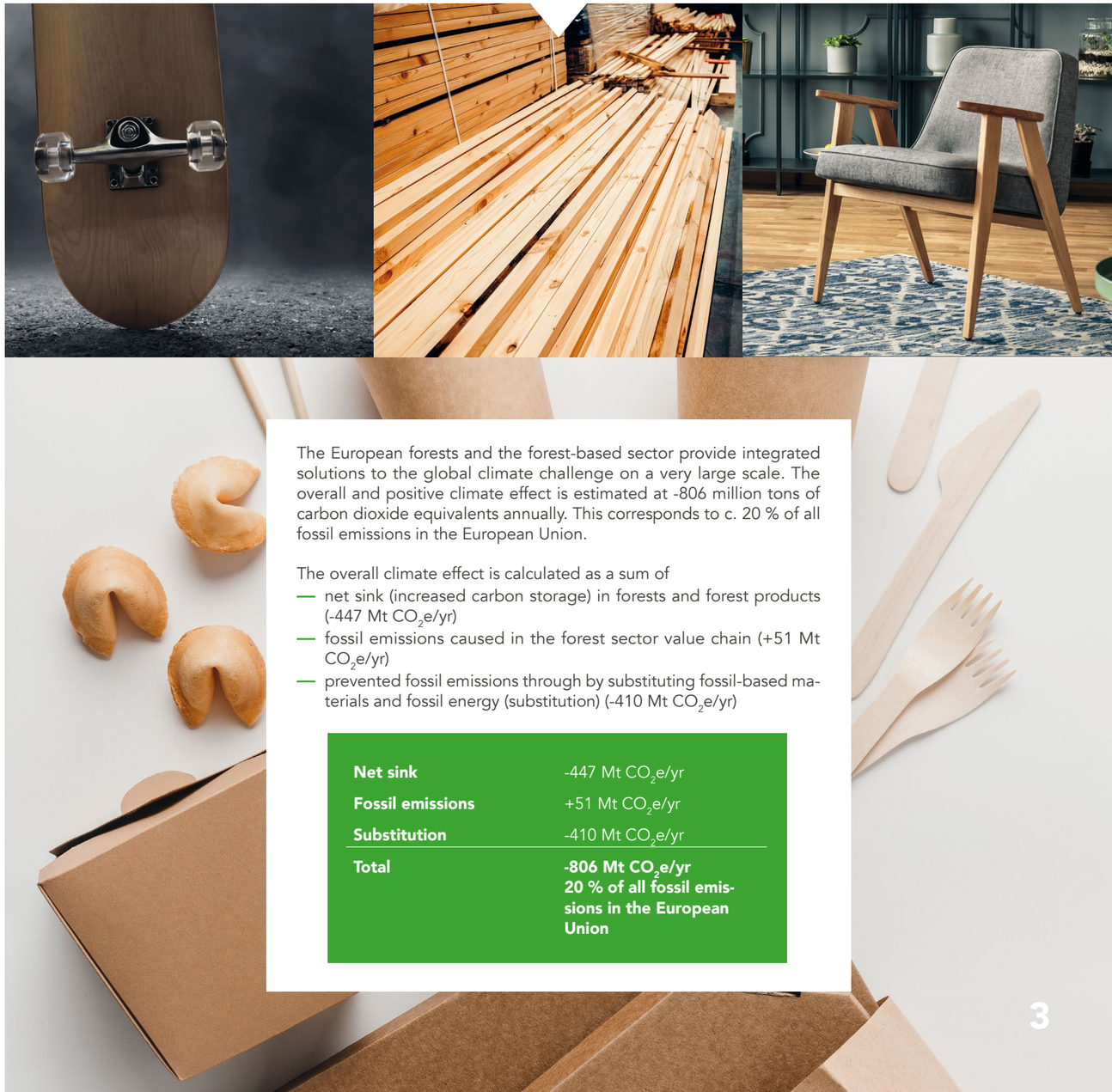
8 % increase in forest area
- **twice the combined size of Belgium and the Netherlands**
- **corresponding to the area of 1.500 football pitches per day**

40 % increase in growing stock
- **from 125 to 160 m^3/ha**
- **6 bn m^3 stock increase, +240 Mm^3/yr**

[1] EU Forest-based Industries 2050: A vision of sustainable choices for a climate-friendly future, Forest-based Industries, 2019. [http://www.cepi.org/system/files/public/documents/FBI%20vision%202050__18112019.pdf]

[2] The Intergovernmental Panel on Climate Change (IPCC) is an intergovernmental body of the United Nations that is dedicated to providing the world with objective, scientific information relevant to understanding the scientific basis of the risk of human-induced climate change, its natural, political, and economic impacts and risks, and possible response options.

EXECUTIVE SUMMARY



The European forests and the forest-based sector provide integrated solutions to the global climate challenge on a very large scale. The overall and positive climate effect is estimated at -806 million tons of carbon dioxide equivalents annually. This corresponds to c. 20 % of all fossil emissions in the European Union.

The overall climate effect is calculated as a sum of
- net sink (increased carbon storage) in forests and forest products (-447 Mt CO_2e/yr)
- fossil emissions caused in the forest sector value chain (+51 Mt CO_2e/yr)
- prevented fossil emissions through by substituting fossil-based materials and fossil energy (substitution) (-410 Mt CO_2e/yr)

Net sink	-447 Mt CO_2e/yr
Fossil emissions	+51 Mt CO_2e/yr
Substitution	-410 Mt CO_2e/yr
Total	**-806 Mt CO_2e/yr 20 % of all fossil emissions in the European Union**

INTERPRETATION OF KEY FINDINGS

By providing a complete analysis of the climate effects of the European forest-based sector, this study aims to support the policy dialogue towards effective climate action. We wish to demonstrate that the LULUCF framework only addresses one part of climate effects of the forest-based sector – the storage of carbon in the forest.

The key to appreciating the study results is to look at the overall contribution of forests through the forest sink and forest-based sector products via the material substitution effect.

FOREST SINK & CARBON STORAGE IN PRODUCTS REMOVE CO_2

CO_2 is removed from the atmosphere in very large quantities and stored in growing forests. The carbon eventually circulates back into the atmosphere to close the loop. Part of this carbon is stored, for a longer or shorter period, in a variety of forest products before re-entering the natural biogenic carbon cycle. European forest resources continue to expand both in standing volume and annual growth, which may offer further potentials.

MATERIAL SUBSTITUTION PREVENTS CO_2 EMISSIONS

Forest products have a very low climate footprint and moreover they reduce demand for products and energy that are based on fossil fuels. This prevention of fossil emissions, or substitution effect, is well known but has not previously been visualized and quantified at the European level. Existing climate reporting and climate policies are not structured to highlight such crosssectorial effects.

ASSESSING THE POSITIVE CLIMATE EFFECT

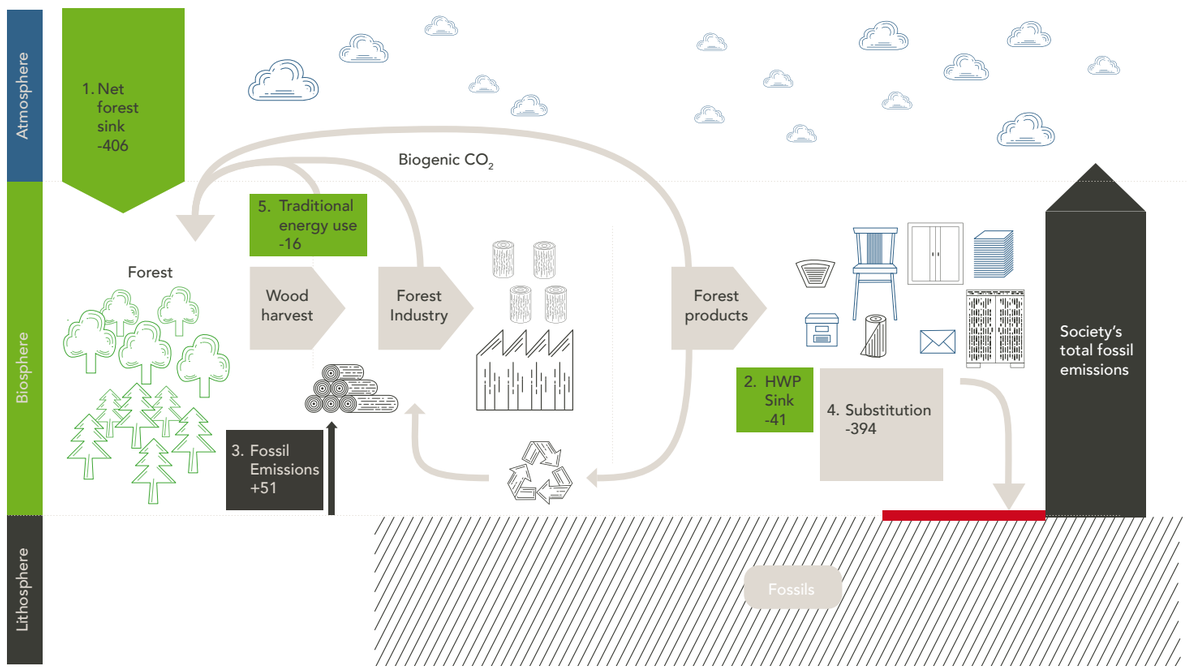
The total assessed climate effect of -806 $MtCO_2e$ in one year corresponds to 20 % of all fossil emissions in the European Union.

About half is due to increased carbon storage in forests and forest products – this part is clearly visible in existing climate reporting. The existing climate reporting doesn't take into account the other half, which corresponds to the fossil emissions prevented through substitution.

Looking at the forest-based sector across conventional UNFCCC reporting structures reveals a much higher positive climate effect than if the forest is assessed in isolation as a set of carbon pools.

It is necessary to have this overall approach to understand the sector's true impact and it makes the case for the forest-based sector to be regarded as one integrated system called "the circular bioeconomy".

CIRCULAR BIOECONOMY APPROACH



The five climate effects (Mt CO_2e/yr) of the forest-based sector in EU27+3 countries as defined in this study. The total effect is -806 Mt CO_2e in 2018, corresponding to c.20 % of EU fossil emissions.

SIGNIFICANCE OF RESULTS FOR EU POLICY-MAKING

The Forest-based Industries wish to contribute to EU climate action, we call the EU to look beyond the LULUCF framework that only addresses one part of climate effects of the forest-based sector – the storage of carbon in the forest.

Viewing the forest-based sector as a "circular bioeconomy" is the only approach that provides an accurate evaluation of the Forest-based Industries overall positive climate contribution.

Of course, it may open a debate on how to reinforce sinks and carbon storage in forests, while at the same time enhancing how forest products and bioenergy provide climate solutions.

However, limiting the policy rhetoric on forests and climate to LULUCF risks leading at inaccurate conclusions for at least three possible reasons:

- Projections of continued high levels of net carbon sinks in the forest may not materialize as risks of storms, pests or fire will increase, possibly more if large tracts of forests are left with little active management for wood production;
- Putting emphasis on carbon storage in the forests, but none on preventing fossil emissions through substitution, may lead to less reductions of fossil emissions than possible and necessary;
- Undervaluing the positive feedback loop by which demand for timber puts a value on the standing forest, thereby disincentivizing long term investment and active management which in turn lead to more stable and increasing sinks and storage.

Instead, it would appear relevant to have the forest-based sector relate to all three main components of EU climate policy: LULUCF; Energy Savings (ES) and ETS.

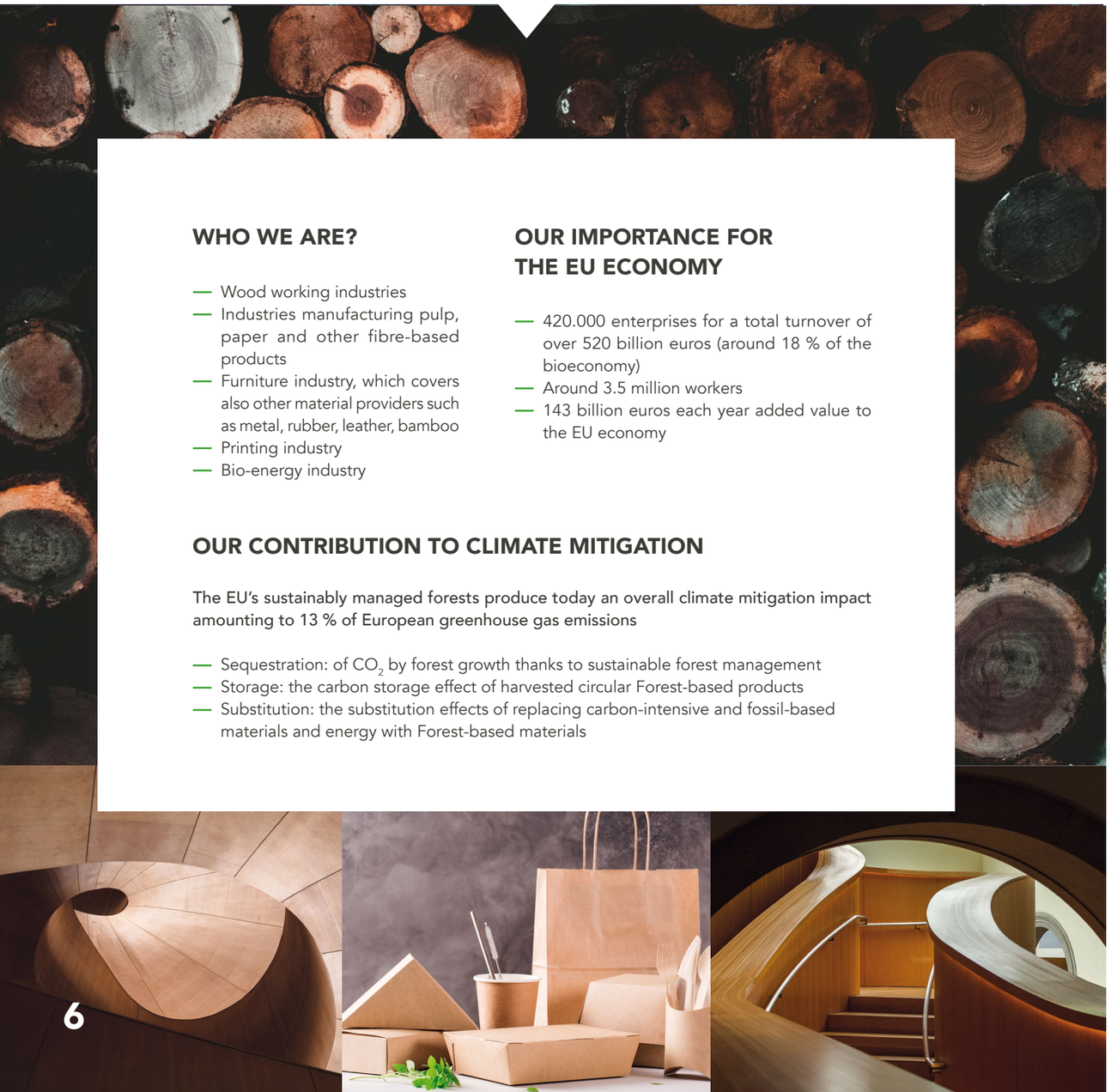
MAKE THE FBI VISION FOR SUSTAINABLE CHOICES A REALITY

The study reinforces the commitment of the Forest-based Industries to provide the most competitive and sustainable netzero carbon solutions by

- substituting CO_2-intensive raw materials and fossil energy with forest-based alternatives
- eradicating waste and boosting recycling with a sector target of at least 90 % material collection and 70 % recycling rate for all wood-based products
- driving resource efficiency and enhancing productivity in all areas including materials, manufacturing and logistics

As we can meet the society's current and future needs with non-fossil materials, we anticipate a growing demand for wood and wood-based products that we expect to be translated into FBI market growth of 3 % annually.

THE EU FOREST-BASED INDUSTRIES TODAY: **STATE OF PLAY**



WHO WE ARE?

- Wood working industries
- Industries manufacturing pulp, paper and other fibre-based products
- Furniture industry, which covers also other material providers such as metal, rubber, leather, bamboo
- Printing industry
- Bio-energy industry

OUR IMPORTANCE FOR THE EU ECONOMY

- 420.000 enterprises for a total turnover of over 520 billion euros (around 18 % of the bioeconomy)
- Around 3.5 million workers
- 143 billion euros each year added value to the EU economy

OUR CONTRIBUTION TO CLIMATE MITIGATION

The EU's sustainably managed forests produce today an overall climate mitigation impact amounting to 13 % of European greenhouse gas emissions

- Sequestration: of CO_2 by forest growth thanks to sustainable forest management
- Storage: the carbon storage effect of harvested circular Forest-based products
- Substitution: the substitution effects of replacing carbon-intensive and fossil-based materials and energy with Forest-based materials

PARTIES INVOLVED

To receive the full study, please contact Cepi Public Affairs & Communications Director Claire Couet: c.couet@cepi.org

LEADERS

Confederation of European Paper Industries (Cepi)

SUPPORTERS

European Confederation of Woodworking Industries (CEI-Bois)

European Furniture Industries Confederation (EFIC)

European Panel Federation (EPF)

Confederation of European Forest Owners (CEPF)

European Organisation of Agricultural, Rural and Forestry Contractors (CEETTAR)

Federation of the European Parquet industry (FEP)

Forest-based Sector Technology Platform (FTP)

European Association for Print and Digital Communication

European State Forest Association (EUSTAFOR)

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