EU FOREST-BASED INDUSTRIES 2050:

CO2 effect calculation supporting sector’s vision of sustainable choices for a climate-friendly future

Jori Ringman
Director General, Confederation of European Paper Industries (Cepi)
Why a CO$_2$ effect calculation?

In 2019, the European Forest-based Industries came together to present their vision of the European society in 2050 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 took the initiative to commission an independent study “Climate effects of the forest-based sector in the European Union”.
Key findings

The European forests and the forest-based sector provide integrated solutions to the global climate challenge on a very large scale.

The overall climate effect is calculated as a sum of:

- Net sink
- Fossil emissions
- Substitution

Total: -806 Mt CO$_2$e/yr
20% of all fossil emissions in the European Union

Net sink
-447 Mt CO$_2$e/yr

Fossil emissions
+51 Mt CO$_2$e/yr

Substitution
-410 Mt CO$_2$e/yr

Total
-806 Mt CO$_2$e/yr
United Nations IPPC advocates the systemic view

**IPCC** 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.

**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.

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change.
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.

The key to appreciating the study results is to look at the overall contribution of forests through the entire system, including forest-based sector products via the substitution effect.
Conclusions for the EU Green Deal Agenda

- Biodiversity Strategy for 2030
- Transition to a Circular Economy
- Preserving Europe’s natural capital
- Sustainable Transport
- Achieving Climate Neutrality
- Clean, Reliable and Affordable energy
- Financing the transition
- Leave no one behind (Just Transition)

- A new Circular Economy Action Plan
- A zero pollution Europe
- Farm to Fork
- The transformation of agriculture and rural areas

- Strategy on the sustainable use of chemicals
- Clean Air and Water Action Plans
- Farm to Fork Strategy
- Vision for Inclusive Rural Areas
- Africa Europe agenda
- CAP reform proposal

- TBD with the commissioner-designate
- Revising 2030 Climate targets
- Extending ETS
- Climate Pact
- Climate Law
- Carbon Border Tax

- Review Energy Legislation
- European Framework for gas
- Review Energy Taxation directive

- European Investment Bank as European Climate Bank
- Sustainable Europe Investment Plan
- Green Financing Strategy
- Mainstreaming climate transition and sustainability in the MFF

- Just Transition Instrument, including the Just Transition Fund
- Mainstreaming the Just Transition in the MFF
The EU Forest-based industries today: State of play

Who we are?

- Wood working 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

Who we are?

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

- Sequestration: of CO2 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

#### Leaders

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#### Supporters

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Climate effects of the forest-based sector in the European Union: Interpretation of key findings

Peter Holmgren
FutureVistas

19 June 2020
1. The circular bioeconomy and the climate
Basics of the forest-based circular bioeconomy

- Forest
- Forest Products

Wood supply

Wood demand
Basic biophysics of the forest-based circular bioeconomy

Forest
Photosynthesis

Biomass

Biogenic CO₂

Forest Products
Use, reuse and eventual combustion

63% of stemwood growth is harvested in EU27+3
Corresponds to 5-6% of biological NPP
The forest-based circular bioeconomy operates in the *atmosphere* and the *biosphere*. 

- Forest
- Forest Industry
- Forest products

**Net sink**

**Biogenic CO₂**

**Wood harvest**

**Traditional energy use**

**Recycling**
The Problem.

Points of (net) interaction with the global climate
Net sink is reported in LULUCF but excluded from IPCC global models. Some still argue that biogenic emissions be counted as fossil ones. Substitution is hidden from view in official climate reporting.

The forest is typically separated from value chain and circularity in climate policy.
2. The European forest-based sector
FOREST
175 Million ha of forest
Grows by 800 million m³ stemwood/year
Harvest is 500 million m³/year (63% of growth)
23% of harvest is wood fuel
+8% forest area since 1990 (=2*(NL+BE))
+40% standing volume since 1990

FOREST PRODUCTS
Wood products 180 Mm³/year
Fibre products 107 Mt/year
(paper recycling rate 52%)
Marketed bioenergy 324 TWh/year
Traditional bioenergy 85 Mm³/year

(all refers to EU27+3)

Sweden+Finland:
29% of forest area
22% of growth (it is cold..)
20% of output (less recycled input)
3. The "substitution effect"
or better:
"elimination of demand for fossil fuels"
What is the question?

• How many tons of fossil carbon remain under ground for each ton of carbon in forest-based products? (tC/tC)

Some issues:
• Risk of focusing on details of products/uses rather than systems analyses – not the complete picture
• Without explicit/formal reporting, methodology standards have not evolved.
• Research results are limited and difficult to compare
• Averages for product categories conceals products with very high effects and those with no effect at all – what will then be the policy guidance?
Factors applied in this study

<table>
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<th>Product category</th>
<th>Applied substitution factor, tC/tC</th>
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<tr>
<td>Solid wood products</td>
<td>1.5</td>
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<tr>
<td>Fibre products</td>
<td>1</td>
</tr>
<tr>
<td>Marketed bioenergy</td>
<td>0.6</td>
</tr>
<tr>
<td>Traditional bioenergy</td>
<td>0.2</td>
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4. Results and conclusions
1. Net forest sink -406

3. Fossil Emissions +51

2. HWP Sink -41

4. Substitution -394

5. Traditional energy use -16

Society's total fossil emissions
# Results for EU 27+3

<table>
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<tr>
<th>Component</th>
<th>Climate effect Mt CO₂e/year</th>
<th>Note</th>
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<tr>
<td>1. Net sink in forest</td>
<td>-406</td>
<td>= LULUCF 4.A</td>
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<tr>
<td>2. Harvested Wood Products, HWP</td>
<td>-41</td>
<td>= LULUCF 4.G</td>
</tr>
<tr>
<td>3. Fossil emissions in value chain</td>
<td>51</td>
<td>Estimate. Input goods not included</td>
</tr>
<tr>
<td>4. Substitution effect, industry products</td>
<td>-394</td>
<td>Conservative calculation based on available literature</td>
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<td>5. Substitution, traditional bioenergy</td>
<td>-16</td>
<td></td>
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<tr>
<td><strong>Total climate effect</strong></td>
<td><strong>-806</strong></td>
<td>= 20% of EU emissions</td>
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Comments on link between sink, sequestration and substitution

Fanny-Pomme Langue
Secretary General, Confederation of European Forest Owners (CEPF)
Comments on the contribution of wood and carbon storage in wood products

Margherita Miceli
Policy Officer,
European Confederation of Woodworking industries (CEI-Bois)
Policy perspective on the climate role of forest-based sector

CEPI Webinar (19 June 2020)

Climate effects of the forest-based sector in the European Union

DG Agriculture and Rural Development
Forests and the forest-based sector in the EU long-term vision

• ‘A Clean Planet for All. A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy’.

• Communication adopted in November 2018

• A portfolio of options (Member States, business, citizens), to achieve the transition to net-zero greenhouse gas emissions by 2050, (and contribute to the modernisation of our economy, improve the quality of life of Europeans, protect the environment, and provide for jobs and growth).

• All options together can reduce net emissions by around 90%

• Remaining GHG emissions, to be compensated for by absorption in other sectors. Role for the land use sector is identified.
Forests and the forest-based sector in the EU long-term vision

Forests, the main potential sink.

• Fundamental role in achieving the 2050 objective.
• This sink is not big enough (300 million tons CO$_2$)
• The forest sink capacity might be at risk.

Role of **sustainable biomass** to Climate neutrality.

• substitution effect
• Need for increasing biomass consumption
• Trade-offs sink-biomass availability
• Limitations of importing
EU Forest Strategy in the Green Deal

• EU’s forested area needs to improve, both in quality and quantity, through sustainable and effective re- and afforestation, the restoration of degraded forests, and forest preservation.

• Objectives:
  • to increase absorption of CO2,
  • improve the resilience of forests, and
  • promote the circular bio-economy.

• Must cover the whole forest cycle and promote the many services that forests provide.

• Reference to the CAP. The national strategic plans should incentivise forest managers to preserve, grow and manage forests sustainably.
Green Deal - Elements of relevance for forests and the forest-based sector to consider in EU Forest Strategy

• The Green Deal is a new growth model: secure the role of forests and the sector in developing a modern, resource-efficient and competitive economy.

• Climate ambition. Seek links with European climate Law towards 2050 climate neutrality; Legislation review (LULUCF, Energy efficiency, RED…); new EU Adaptation Strategy.

• Energy: RED; Role in Renovation wave for building sector.

• Biodiversity & Environment. EU Biodiversity Strategy 2030 & 8th EAP

• Circular economy action plan: Sustainable products initiative, with a focus on resource intense sectors (construction, textiles…)

The EU Forest Strategy

EU Forest Strategy (2021):

• Adoption in Q1, 2021

• Find the equilibrium of the 4 basic elements for forests and the forest based sector
  1) Afforestation and forest restoration
  2) Forest Resilience & protection
  3) Sustainable forest management of all forests
  4) Building the new growth model. Contributing to the different dimensions of the Green Deal

• Link with the EU funding opportunities

• Be consistent with our international commitments with forests and sustainability.
Thank you