

Wood and wood-based products - Greenhouse gas dynamics (ISO 13391)

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The ISO 13391 standard series, published in April 2025, offers opportunities for forest managers, wood-processing corporations and manufacturers of wood-based products. It provides a holistic method for assessing and reporting the climate performance of wood and wood-based products.

The key aspect of the new standard series is that wood and wood-based products are related to achieve both two fundamental climate change mitigation goals stipulated by the climate change convention (UNFCCC):

- Reduce emissions of greenhouse gases from fossil fuels and industrial processes – the main climate change mitigation task;
- Enhance the sinks and reservoirs of carbon, particularly in natural ecosystems.

In existing reporting frameworks, forests are considered for their ability to store carbon (including wood carbon stored in products). Reductions of greenhouse gas emissions are, however, determined separately and within other sectors. Consequently, the overall impact of forest management and wood-based products is not made visible. The new standard bridges this gap and addresses both goals as illustrated in Figure 1.

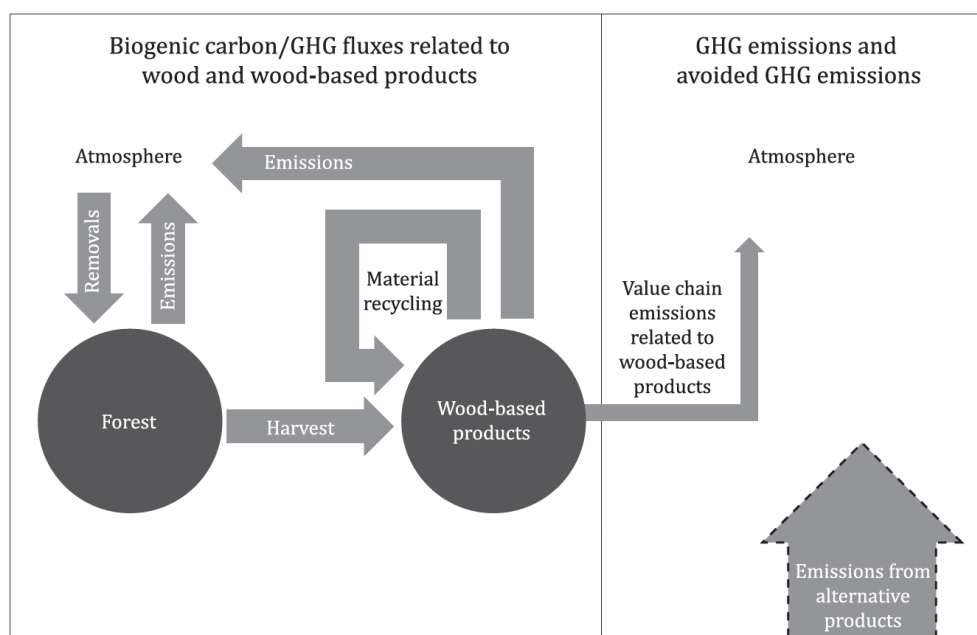


Figure 1. Emissions and removals related to wood and wood-based products. The left part refers to the goal of enhancing sinks and reservoirs of carbon. It illustrates biogenic fluxes in a circular forest-based bioeconomy. The right part refers to the goal of reducing GHG emissions. It includes emissions from the wood-based value chain and illustrates the potentially avoided emissions from alternative products with a higher climate footprint.

Four reporting components are included in the standard series for a full picture of greenhouse gas dynamics of wood and wood-based products, see also Figure 2:

1. Forest carbon balance – includes impacts of forest management and wood sourcing for all products considered;
2. Storage of carbon in wood-based products – long-lived products and recycled materials keep carbon away from the atmosphere for an extended period of time.
3. Value chain emissions related to the wood-based products – including forest management, transportation, industrial processing and third party emissions;
4. Potentially prevented emissions from alternative, more emission-intensive materials and products such as concrete, steel, glass, plastics and fossil-based energy.

Components 1 and 2 together align with the Land Use, Land Use Change and Forestry Sector (LULUCF) reporting framework. Components 3 and 4 together represent the greenhouse gas displacement potential of wood-based products.

Each component builds on established guidelines and protocols for climate impacts reporting and life-cycle assessments. The ISO 13391 standard is also linked to a wide range of existing ISO standards.

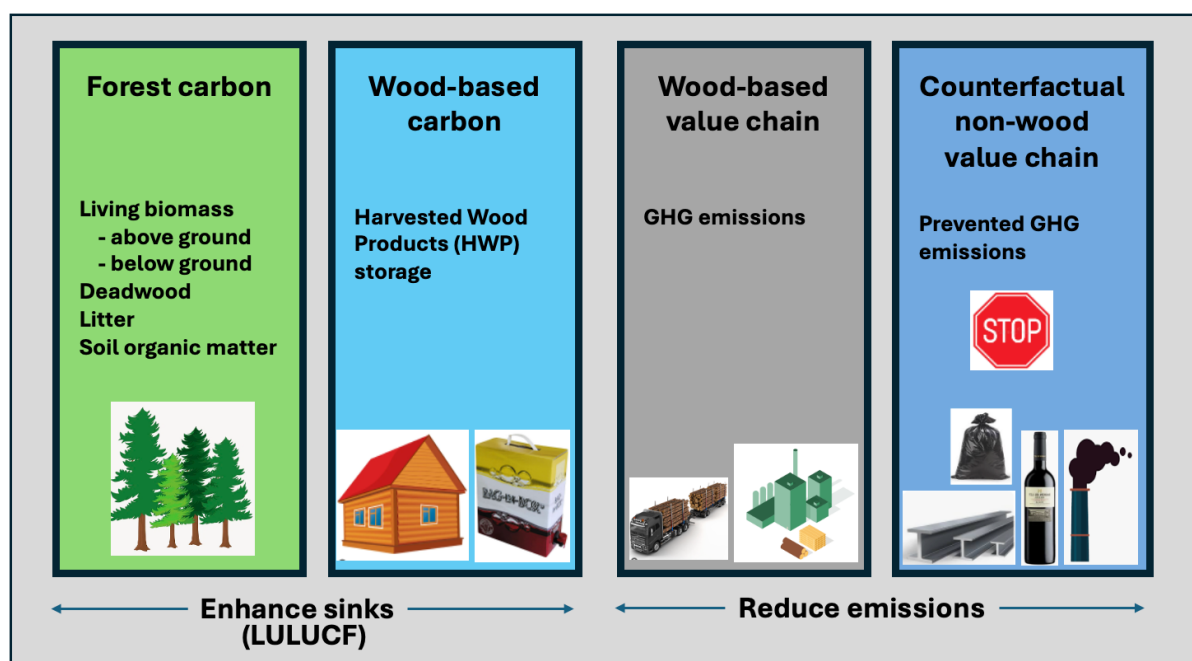


Figure 2. The four reporting components in the ISO 13391 series. Illustrations exemplify considerations in each component.

Implementing the standard can lead to several opportunities:

- The positive contributions of wood and wood-based products for the transition to a low-emission economy are made visible to market actors, including in the finance sector;
- Policy processes related to forests and forest management can be better informed of the overall impact of the forest-based bioeconomy;
- Investment decisions related to forest industries can be guided by information on climate effects;
- Research, development and innovation efforts can be supported and strengthened with respect to potential climate impact.
- Initiatives to reduce emissions from consumption can be better informed and made more effective;

As of April 2025, several forest industry corporations and forest owner associations have been early adopters of the standard methodology, including in annual reports of SCA, Holmen, Södra, StoraEnso, Norra Skog, Statskog and Billerud.

Further reading:

Wood and wood-based products – Greenhouse gas dynamics
ISO 13391 international standard series:

Part 1. Framework for value chain calculations

<https://www.iso.org/standard/84358.html>

Part 2. Forest carbon balance

<https://www.iso.org/standard/84359.html>

Part 3. Displacement of greenhouse gas emissions

<https://www.iso.org/standard/84360.html>