



# Metsä Group's Climate Impact Reporting in the annual Sustainability Statement

# Metsä Group

Sales\* EUR **6.1** billion | Personnel **9,500** | Renewable energy **26,9** TWh

**Metsäliitto Cooperative** | The Group's parent company | Owned by over 90,000 Finnish forest owners

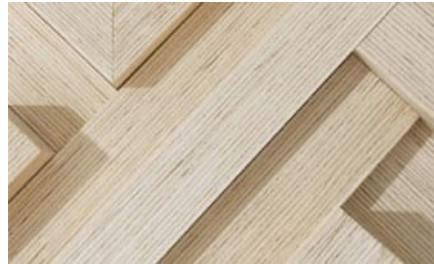


## METSÄ FOREST

**Wood supply and forest services**

Sales:  
**EUR 2.2 billion**

Personnel:  
**700**



## METSÄ WOOD

**Wood products**

Sales:  
**EUR 0.6 billion**

Personnel:  
**1,550**



## METSÄ FIBRE

**Pulp and sawn timber**

Sales:  
**EUR 2.5 billion**

Personnel:  
**1,600**



## METSÄ BOARD\*\*

**Paperboard**

Sales:  
**EUR 1.9 billion**

Personnel:  
**2,250**



## METSÄ TISSUE

**Tissue and grease-proof papers**

Sales:  
**EUR 1.3 billion**

Personnel:  
**2,500**

**METSÄ SPRING** | Innovation company

# Sustainable growth from renewable wood raw material

**#1** We are the market leader in wood trade and forest services in Finland

Sales, EUR

**2.2 billion**

## We serve forest owners

The focus of our operations is in Finland, where we serve the owner-members of our parent company Metsäliitto Cooperative.

Owner-members

**> 90 000**

## We serve industry that use wood

We procure all the wood used by Metsä Group from northern forests. We also supply wood to selected external customers.

**30.4 million**

m<sup>3</sup> trees per year

**ca. 200**

delivery destinations in the Baltic Sea region



# Climate Impact Reporting Frameworks

## Corporate Sustainability Reporting Directive's standard E1 – Climate Change

- Legal requirement to disclose climate change impacts, risks, and opportunities, as well as the measures for managing them
- No sector-specific standards
- Disclosure requirements include:
  - Governance
    - e.g., transition plan for climate change mitigation
  - Strategy
  - Impact, risk and opportunity management
  - Metrics and targets
    - e.g., energy consumption, and GHG emissions

## Task Force on Climate-Related Financial Disclosures (TCFD)

- Voluntary framework for disclosing financial impacts of climate change risks and opportunities
- No sector-specific standards
- Disclosure requirements include:
  - Governance
  - Strategy
  - Risk management
  - Metrics and targets

## SASB standard (applies only to Metsä Board)

- Voluntary framework for disclosing financially material sustainability information
- Industry-specific standard: SASB Pulp & Paper Products
- Disclosure requirements include:
  - Greenhouse gas emissions
  - Air quality – Emissions to air
  - Energy management
  - Water management
  - Supply chain management
  - Activity metrics

# Reporting in accordance with the CSRD E1 - Climate Change Standard 1/2

## Corporate Sustainability Reporting Directive's standard E1 – Climate Change

- Legal requirement to disclose climate change impacts, risks, and opportunities, as well as the measures for managing them
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  - Governance
    - e.g., transition plan for climate change mitigation
  - Strategy
  - Impact, risk and opportunity management
  - Metrics and targets
    - e.g., energy consumption and GHG emissions

## Reporting as part of Metsä Group's annual Sustainability Statement

- Example of reporting impacts, risks, and opportunities:

E1 – Climate change		
Material impacts, risks and opportunities related to climate change mitigation and energy		
Impacts	Risks and opportunities for Metsä Group	Management
<b>Greenhouse gas emissions in own operations</b>		
<p>↓ Metsä Group's production generates climate-warming greenhouse gas emissions (Scope 1 and Scope 2), p. 42</p>	<p>↑ <b>Market opportunity:</b> By generating and consuming renewable energy, Metsä Group can replace fossil-based energy sources. Renewable energy already accounts for 86% of the energy used in Metsä Group's production (Scope 1 and Scope 2), p. 43. Most of the energy generated at Metsä Group is used in the company's own production, and some of Metsä Group's production units are energy self-sufficient.</p>	<ul style="list-style-type: none"> <li>• Metsä Group's strategic target is to improve energy efficiency and the transition to entirely fossil free fuels, as well as fossil free purchased electricity and heat.</li> <li>• During the financial year, a survey was conducted on the feasibility of technological carbon sinks in Metsä Group's operations.</li> <li>• Active dialogue with policymakers develops the operating environment. Political influencing is discussed in more detail in section G1 – Business conduct.</li> </ul>
<p>↔ The company's biogenic carbon dioxide emissions are classified as carbon-neutral, p. 42.</p>	<p>↑ <b>Market opportunity:</b> In 2023, Metsä Group studied technical and business opportunities for recovering biogenic carbon dioxide and reusing it as a raw material for renewable bioproducts.</p>	
<p>↑ Metsä Group is a nationally significant producer of renewable energy. The bio-based renewable fuels that Metsä Group uses mainly consist of wood-based production side streams and logging residue.</p>	<p>↓ <b>Regulatory risk:</b> Regulation sets significant requirements for new production technology reducing emissions or affects the sustainability criteria of biogenic carbon dioxide emissions in terms of climate neutrality. This may cause changes in the pricing of energy and greenhouse gas emissions, increasing expenses in both production and transports.</p>	
<b>Greenhouse gas emissions in the upstream and downstream value chain</b>		
<p>↓ Metsä Group's upstream and downstream value chain generates climate-warming greenhouse gas emissions (Scope 3), p. 42.</p>	<p>↑ <b>Market opportunity:</b> Metsä Group's main raw material, wood, is mainly procured (p. 75) from Finnish forests, and mostly from the forests of Metsäliitto Cooperative's owner-members, keeping transport distances moderate.</p>	<ul style="list-style-type: none"> <li>• During the financial year, a Group-level project to calculate Scope 3 emissions was initiated.</li> <li>• Suppliers are encouraged to set emissions reduction targets, for example, in line with the SBTi. Metsä Board has a Scope 3 target approved by the SBTi for supplier commitment.</li> <li>• Joint emissions reduction projects are agreed with suppliers. They are related to the company's strategic target of setting a joint sustainability target with partner suppliers.</li> <li>• Active dialogue with policymakers develops the operating environment.</li> <li>• By 2030, Metsä Group aims to have reduced fossil carbon dioxide emissions from wood supply in Finland by 30 per cent from the 2022 level. One way to reduce emissions is to introduce electric and biogas lorries to the Kemi bioproduct mill's wood transports.</li> <li>• Metsä Tissue aims to produce all its tissue paper products as close as possible to consumers. More than 90% of the deliveries are within a radius of 500 kilometres.</li> </ul>
	<p>↓ <b>Regulatory and market risk:</b> Regulation and customer requirements increase the demands to reduce greenhouse gas emissions in the value chain. A comprehensive identification, accurate measurement and reduction of climate impacts is more challenging in the value chain than in the company's own operations.</p>	
<b>Carbon balance of forests</b>		
<p>↔ Metsä Group provides forest management services in line with regenerative forestry to</p>	<p>↓ <b>Regulatory risk:</b> Regulation concerning the use of forests as carbon storage restricts harvesting volumes</p>	<ul style="list-style-type: none"> <li>• Metsä Forest has a regenerative forestry strategy that aims to measurably strengthen the state of nature by</li> </ul>

# Reporting in accordance with the CSRD E1 - Climate Change Standard 2/2

## E1 – Climate change

### Material impacts, risks and opportunities related to climate change mitigation and energy

Impacts	Risks and opportunities for Metsä Group	Management
<b>Carbon balance of forests</b>		
<p>↔ Metsä Group provides forest management services in line with regenerative forestry to Metsäliitto Cooperative's owner-members, thus promoting carbon storage in commercial forests. Metsä Group is developing a calculation to verify the impact of wood supply and forest management on the carbon balance. Most of the wood is procured from owner-members' forests, and owner-members own 31 per cent of Finnish forests.</p>	<p>↓ <b>Regulatory risk:</b> Regulation concerning the use of forests as carbon storage restricts harvesting volumes.</p> <p>↓ <b>Market risk:</b> Consumers' critical view of forest use, as forests are seen as carbon storage.</p> <p>↑ <b>Market opportunity:</b> Wood is Finland's most significant processed natural resource, providing a good basis for the bioeconomy, circular economy and innovations based on a renewable raw material.</p>	<ul style="list-style-type: none"> <li>• Metsä Forest has a regenerative forestry strategy that aims to measurably strengthen the state of nature by 2030.</li> <li>• Metsä Forest has strategic targets, the achievement of which increases carbon storage in commercial forests and promotes forest biodiversity.</li> <li>• Raw materials are used resource efficiently to avoid waste in production. The goal is to make full use of production side streams.</li> <li>• The calculation and reporting of the carbon balance of forests is being developed in cooperation with partners.</li> <li>• Active dialogue with policymakers develops the operating environment.</li> </ul>

### Metsä Group's 2030 sustainability targets

	2030 target	2023	2022	2018
Energy efficiency index, base year 2018	90	102	99	100
Fossil-based carbon dioxide emissions (Scope 1 and Scope 2 market-based)	0 t	806,683 t	1,090,669 t	1,449,234 t
Fossil free raw materials and packaging materials, share of dry tonnes	100%	99.3%	99.2%	-
Amount of forest regeneration and young stand management from the 2018 level	+30%	+14%	+2.8%	33,265 ha
Amount of forest fertilisation from the 2018 level	+50%	-26%	-	9,115 ha
Share of continuous cover forestry in peatland forest regeneration	30%	17%	-	-
Amount of carbon stored in wood products from the 2018 level	+30%	-21%	-12%	1,651,505 t

Comparative data have not been provided for all the new targets set in 2023. Information for 2018 is not disclosed in the case of fossil free raw materials and packaging materials due to changes in calculation. Further information is provided under Reporting principles for metrics.

# E1 – Climate change

## We are committed to

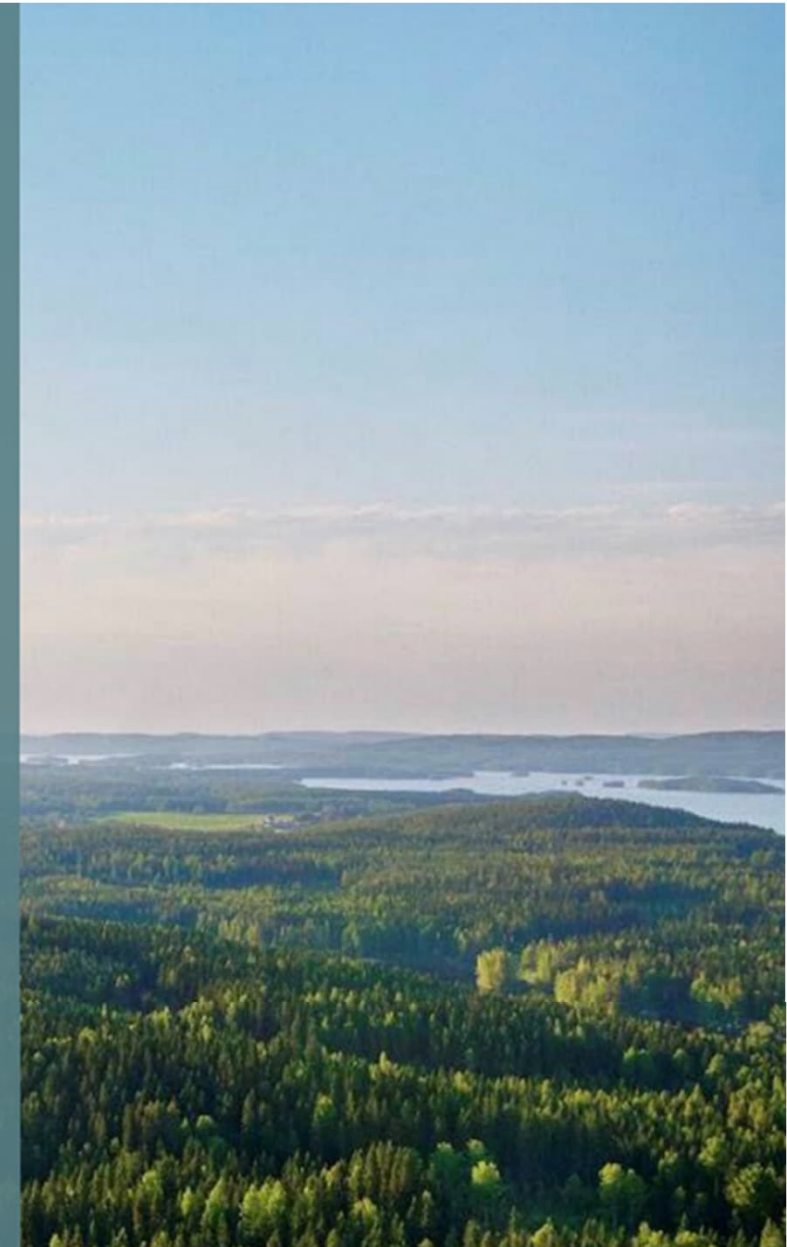
- Use only fossil free fuels at our production units
- Replace our purchased electricity and heat with fossil free alternatives
- Promote environmental and energy efficiency and find fossil free alternatives for all the raw materials and packaging materials we use

## We focus on

- Increasing carbon storage and promoting forest biodiversity

## From our suppliers we

- Require committing to the Supplier Code of Conduct
- Recommend setting targets for reducing their greenhouse gas emissions
- Require adopting certified environmental management systems as applicable





# Greenhouse gas emissions and energy in our own operations

In production, our plan for climate change mitigation comprises investments and measures for replacing fossil fuels with renewable fuels and fossil free electricity at all the company's production units and power plants.

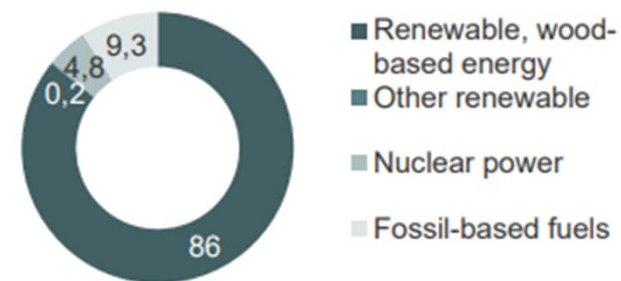
These measures include the transition to fossil free fuels and purchased energy at power plants, the improvement of energy efficiency and the reduction of water consumption.



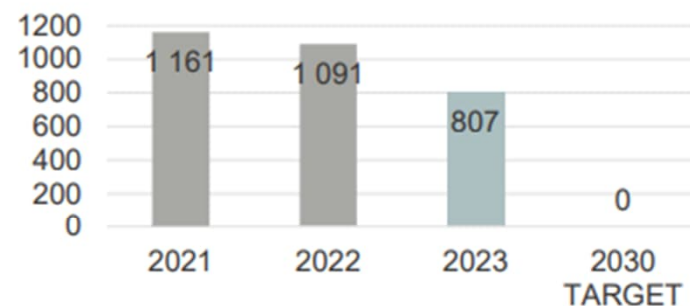
## 2023 in brief

- The new Kemi bioproduct mill started up in September 2023. The mill uses zero fossil fuels, and its renewable energy production significantly exceeds its own need.
- We made small investments and saved energy with operational energy efficiency measures.
- In 2023, we explored technological carbon sinks with Fortum.
- We studied the opportunity to produce biomethanol in one of Metsä Group's production units.
- We also investigated the construction of a carbon capture facility.

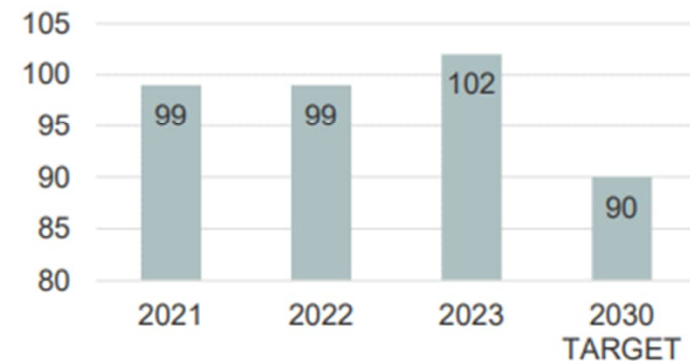
## Total energy consumption by energy source 2023, %



## Fossil-based carbon dioxide emissions in our own operations (Scope 1 and Scope 2, market-based), 1,000 t



## Energy efficiency index



# Greenhouse gas emissions in the value chain

- We encourage suppliers to set emissions reduction targets as part of their code of conduct.
- We set joint emissions reduction targets with suppliers to reduce emissions in the value chain. For example, the joint 2030 target of Metsä Group and VR, a logistics group, will halve emissions from transports covered by the cooperation.
- By 2030, Wood Supply aims to have reduced fossil carbon dioxide emissions in Finland by 30 per cent.
- In 2023, we published our Scope 3 emissions for the first time. In 2023, emissions in Metsä Group's value chain totalled 5,891,347 tCO<sub>2</sub>e, which accounted for roughly 87 per cent of total emissions (market-based Scopes 1, 2 and 3 emissions).



# Carbon balance of forests

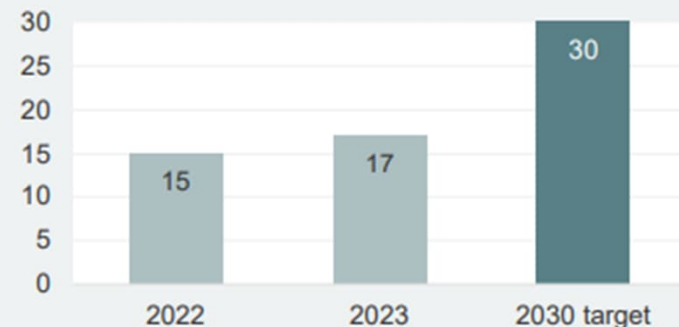
- In 2023, we adopted our regenerative forestry principles, the goal of which is to measurably improve the state of nature in Finland. We will increase forests' carbon storage, biodiversity and capacity to adapt to climate change. We use international forest certification systems – PEFC and FSC® – and our target share for certified wood is more than 90% by 2030. We achieved this target in 2023.
- A tangible example of regenerative forestry measures comes from the Metsä Group Plus service, which is Metsäliitto Cooperative's forest management model designed for its owner-members. In the model, measures that safeguard and improve the state of forest nature more comprehensively than current standard practices and certificates are agreed in connection with wood trade and orders for young stand management. Owner-members receive an additional bonus for using the service.
- In 2023, we progressed as planned in forest-related climate targets except for fertilising. This was caused by the supply of fertilisers decreasing, among other things, because the import of fertiliser raw materials from Russia ended.



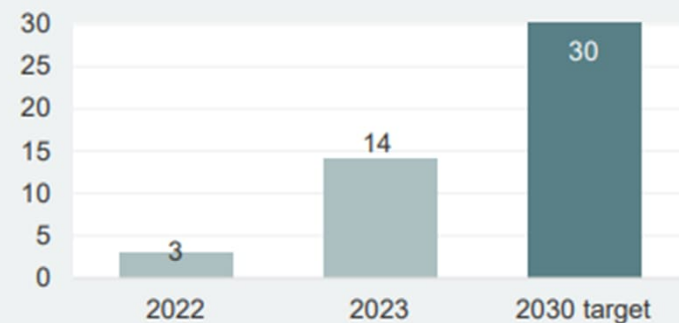
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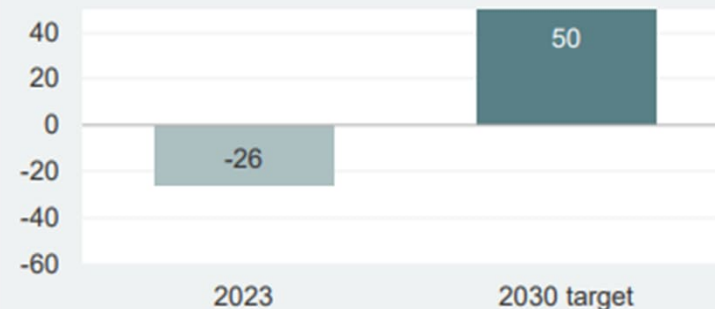
Share of continuous cover forestry in peatland forest regeneration, %



Amount of forest regeneration and young stand management from the 2018 level, %



Amount of forest fertilisation from the 2018 level, %

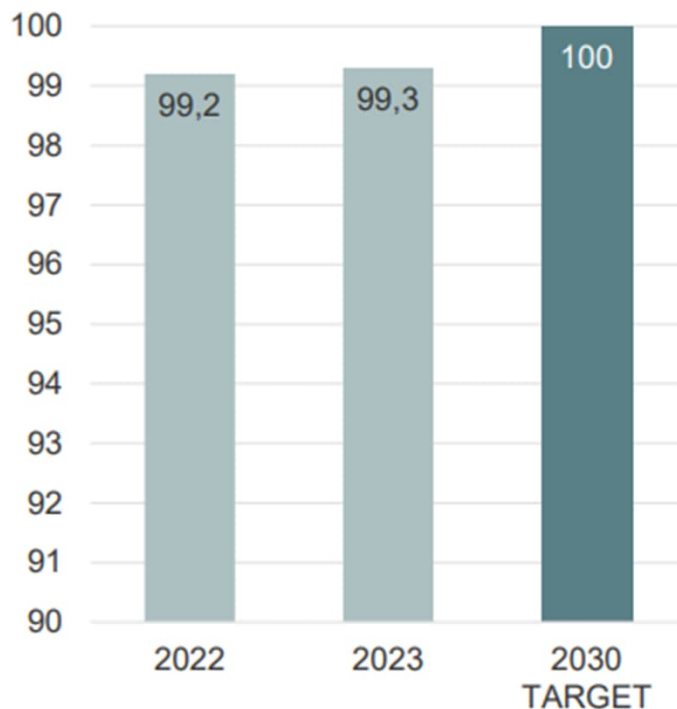


# Products

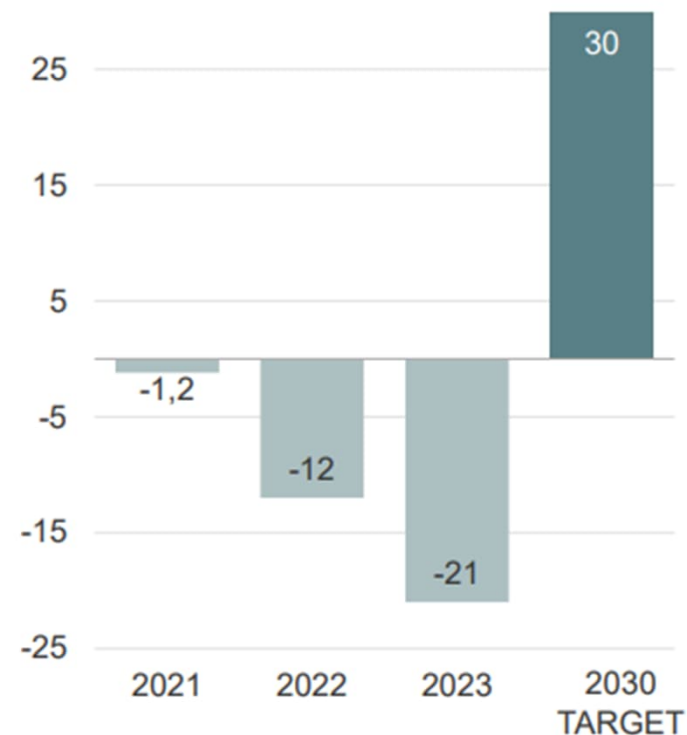
Many Metsä Group products mitigate climate change by replacing materials produced from non-renewable raw materials. In addition, our wood products store carbon. We aim to replace fossil-based raw materials and packaging materials with fossil free alternatives by 2030.

We focus on long-term research, mill-scale trials with new raw materials, packaging material trials and the development of procurement systems. In the best case, products currently under development can have a significant impact on climate change mitigation.

**Fossil free raw materials and packaging materials, share of dry tonnes, %**



**Amount of carbon stored in wood products from the 2018 level, %**



# Reporting in accordance with TCFD recommendations

## Task Force on Climate-Related Financial Disclosures (TCFD)

- Voluntary framework for disclosing financial impacts of climate change risks and opportunities
- No sector-specific standards
- Disclosure requirements include:
  - Governance
  - Strategy
  - Risk management
  - Metrics and targets

## Reporting as a content index in a separate appendix to the Sustainability Statement

### Disclosures in accordance with the TCFD recommendations

The TCFD (Task Force on Climate-related Financial Disclosures) recommendations were included in the ISSB (International Sustainability Standards Board) standards in 2023. As Metsä Board Corporation does not currently report according to the ISSB standards, the company's 2023 TCFD report is presented in the following table. The references to more de-tailed information are indicated with abbreviations: (SS) Sustainability statement, (BD) Report of the Board of Directors, (CG) Corporate governance statement.

<b>Governance</b>	
Disclose the organisation's governance around climate-related risks and opportunities.	
a) Describe the Board of Directors' oversight of climate-related risks and opportunities.	SS: Sustainability governance and strategy, pp. 21–24 CG: Risk management, p. 162
b) Describe management's role in assessing and managing climate-related risks and opportunities.	SS: Sustainability governance and strategy, pp. 21–24 CG: Risk management, p. 162
<b>Strategy</b>	
Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning where such information is material.	
a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term.	SS: Identification and assessment of material impacts, risks and opportunities, pp. 26–28 SS: E1 Climate change, pp. 33–39 SS: E5 Resource use and circular economy, pp. 46–49 BD: Most significant risks and uncertainties, pp. 16–18 CG: Risk management, p. 162
b) Describe the impact of climate-related risks and opportunities on the organisation's business, strategy and financial planning.	SS: Business model, value chain and strategy, pp. 23–24 SS: E1 Climate change, pp. 33–39 SS: E5 Resource use and circular economy, pp. 46–49 BD: Most significant risks and uncertainties, pp. 16–18 CG: Risk management, p. 162
c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a scenario of 2°C or lower scenario.	In accordance with Metsä Board's strategy, the company has a plan encompassing all its mills for achieving zero fossil-based carbon dioxide emissions (Scope 1 and Scope 2, market-based) by the end of 2030. The emissions target is science-based and approved by the SBTi (target level of 1.5°C). Fossil free targets have also been defined for all raw materials. To mitigate climate change and adapt to a low-carbon future, the company has made investments and adopted development measures that concern energy efficiency and enable the transition to fossil free energy sources in its own energy production and purchased energy. It will continue these investments and development measures. The company has analysed climate-related scenarios and examined the potential impacts of transitional and physical risks and opportunities on its business. Among other things, Metsä Board employs analyses based on the RCP 2.6, RCP 4.5 and RCP 8.5 scenarios (RCP = Representative Concentration Pathway) used by the Intergovernmental Panel on Climate Change (IPCC).  SS: E1 Climate change, pp. 33–39 SS: E5 Resource use and circular economy, pp. 46–49 BD: Most significant risks and uncertainties, pp. 16–18
<b>Risk management</b>	
Disclose how the organisation identifies, assesses and manages climate-related risks.	

# Reporting in accordance with SASB standards

SASB standard  
(applies only to Metsä Board)

- Voluntary framework for disclosing financially material sustainability information
- Industry-specific standard: SASB Pulp & Paper Products
- Disclosure requirements include:
  - Greenhouse gas emissions
  - Air quality – Emissions to air
  - Energy management
  - Water management
  - Supply chain management
  - Activity metrics

## Reporting as a content index in a separate appendix to the Sustainability Statement

### SASB content index

In 2023, Metsä Board Corporation's reporting complies with the SASB Pulp & Paper Products industry standard, which belongs to the SASB Renewable Resources & Alternative Energy sector. The following table contains references to further details in the Sustainability statement (2022 figures in brackets). The information in the table has been assured by a third party (limited assurance).

CODE	METRIC	CATEGORY	COMMENTS AND REFERENCES
<b>Greenhouse gas emissions</b>			
RR-PP-110a.1	Gross global Scope 1 emissions	Quantitative	201,984 t CO <sub>2</sub> e (264,961)
RR-PP-110a.2	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets.	Discussion and analysis	E1 Climate change, pp. 33–39
<b>Air quality – Emissions to air</b>			
RR-PP-120a.1	NO <sub>x</sub>	Quantitative	1,285 t (1,226)
	SO <sub>x</sub>	Quantitative	176 t (418)
	Volatile Organic Compounds (VOC)	Quantitative	Metsä Board's production processes do not generate substantial amounts of VOCs, and Metsä Board is not obligated to measure them regularly. Metsä Board therefore does not consider VOCs material in terms of disclosure.
	Particulate Matter (PM)	Quantitative	55 t (285)
	Hazardous Air Pollutants (HAP)	Quantitative	Metsä Board's production processes do not generate substantial amounts of HAPs, and Metsä Board is not obligated to measure them regularly. Metsä Board does not therefore consider HAPs material in terms of disclosure.
<b>Energy management</b>			
RR-PP-130a.1	Total energy consumed	Quantitative	7,648 GWh, or 27,534,262 GJ (8,561; 30,819,600) According to established practice, the company reports its energy consumption based on lower heating values, E1 Climate change, pp. 33–39.
	Percentage grid electricity	Quantitative	18% (22)
	Percentage from biomass	Quantitative	73% (67)
	Percentage from other renewable energy	Quantitative	0.5% (3) In addition to renewable energy sources, nuclear power produced without fossil fuels plays an important role in achieving the company's fossil free target.
	Total self-generated energy	Quantitative	4,965 GWh, or 17,872,686 GJ (4,941; 17,787,600) Of this, 4,491 GWh, or 16,168,792 GJ (4,345; 15,642,000) was renewable energy. A total of 70 GWh, or 253,139 GJ (67; 241,200) of energy was sold outside Metsä Board. Of the energy sold, 62 GWh, or 222,998 GJ, was renewable.
	Risks and uncertainties associated with the use of biomass for energy.	Discussion and analysis	The biomass we use mainly consists of the black liquor, bark and logging residue generated in our production and wood supply. We have performed a risk analysis of the biomass, and all the biomass we use is climate neutral in accordance with EU regulations and meets the EU's sustainability criteria. Should the sustainability criteria change in the long run, some additional costs may be allocated to biomass's energy use.
<b>Water management</b>			
RR-PP-140a.1	Total water withdrawn	Quantitative	101,943 (1,000 m <sup>3</sup> ) (114,465) total water withdrawn



# Metsä

Vesa Junnikkala, Sustainability Director  
[vesa.junnikkala@metsagroup.com](mailto:vesa.junnikkala@metsagroup.com)  
+358503731488