

Information about the report

Koskisen's Greenhouse gas (GHG) inventory report illustrates the reporting requirements of the GHG Protocol Corporate Standard and the Scope 3 Standard. Inventory report includes information about Koskisen's Scope 1, 2, and 3 emissions and contains also information on sequestered atmospheric carbon stored in wood products.

Part 1: Descriptive information

Descriptive information	
Company name	Koskisen Group
Description of the company	Koskisen is a Finnish listed wood product company processing wood into sawn timber, plywood, chipboard and more. The company's operations are based on sustainable forestry and skilled wood procurement, the processing of wood into bioeconomy products and green construction, and the creation of added value for customers and other stakeholders. Koskisen's production facilities are in Finland and Poland and has approximately 900 employees.
Chosen consolidation approach	Financial control
Description of the businesses and operations included in the company's organizational boundary	<p>Direct and indirect (Scope 1,2 and 3) GHG emissions from Koskisen operations are reported according to the GHG Protocol standard.</p> <p>The GHG emissions reported under Scope 1 and 2 include production facilities in Finland (sawmill, plywood and chipboard production in Järvelä, thin plywood production in Hirvensalmi) and in Poland (Kore ready-to-install van cargo interior protection sets in Toporów).</p> <p>Scope 3 emissions occur from sources owned or controlled by other entities in the value chain. Koskisen's Scope 3 emissions include emissions from production facilities in Finland and from Poland if reliable data were available on a category-by-category basis. In case of limitations in the boundary they are reported in connection with the categories and indicators in question.</p>
The reporting period covered	1.1 - 31.12.2023
A list of scope 3 activities included in the report	<p>The following Scope 3 activities are included in the report:</p> <p>Category 1: Purchased goods and services</p> <ul style="list-style-type: none"> - Wood - Other raw materials (glue, coatings, paints, plastics and metals) - Packaging materials - Lubricants - Spare parts <p>Category 2: Capital goods</p> <ul style="list-style-type: none"> - New constructed buildings - Production machinery and equipment



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Category 3: Fuel- and energy-related activities (not included in scope 1 and 2)

- Upstream emissions
- Transport and distribution losses

Category 4: Upstream transportation and distribution

- Outsourced contract logistics partners (harvesting and transport of wood, in-house transportation)

Category 5: Waste generated in operations

- Waste (plastics, cardboard, metal, glass, mixed waste, hazardous waste)
- Wastewater
- Emissions from closed Paaskallio landfill excluded

Category 6: Business travel

- Flights
- Public transportation

Category 7: Employee commuting

- Own and contractor's employees working at factory area

Category 9: Downstream transportation and distribution

- Outsourced contract logistics partners (product transportation road, marine, air)

Category 12: End-of-life treatment of sold products

- Wood product end-of-life treatment (assumed treatment: incineration)

A list of scope 3 activities excluded from the report with justification for their exclusion

The following list presents the Scope 3 activities excluded from the report:

Category 1: Purchased goods and services - category limitations

- This category is relevant for Koskisen and emissions from purchased goods are reported. Emissions from Purchased services is excluded since reliable data was not available.

Category 8: Upstream leased assets – category excluded

- This category is not relevant

Category 10: Processing of sold products – category excluded

- Manual installation as an assumption with no GHG emissions

Category 11: Use of sold products – category excluded

- Wood products do not cause emissions at the stage of use.

Category 13: Downstream leased assets – category excluded

- This category is not relevant for Koskisen, no Scope 3 emissions associated with leased assets

Category 14: Franchises – category excluded

- This category is not relevant for Koskisen, no Scope 3 emissions associated with franchises activities

Category 15: Investments

	- This category is not relevant for Koskisen, no Scope 3 emissions associated with investments and the company does not provide financial services.
The year chosen as base year and rationale for choosing the base year ¹	The base year is 2022, which is the first year when Greenhouse Gas (GHG) Protocol was applied.
Recalculation policy	If there will be any significant emissions changes which trigger recalculation of the base year emissions, the context will be explained.

Part 2: Greenhouse gas emissions data

Scopes and categories	Metric tons CO ₂ e
Scope 1: Direct emissions from owned/controlled operations	6 769
Scope 2: Indirect emissions from the use of purchased electricity, steam, heating, and cooling location-based	4 728
Scope 2: Indirect emissions from the use of purchased electricity, steam, heating, and cooling market-based	14 905
Upstream scope 3 emissions	
Category 1: Purchased goods and services	83 620
Category 2: Capital goods	16 254
Category 3: Fuel- and energy-related activities (not included in scope 1 or scope 2)	13 791
Category 4: Upstream transportation and distribution	3 514
Category 5: Waste generated in operations	861
Category 6: Business travel	171
Category 7: Employee commuting	1 103
Category 8: Upstream leased assets	n/a
Other	n/a
Downstream scope 3 emissions	
Category 9: Downstream transportation and distribution	31 804
Category 10: Processing of sold products	n/a
Category 11: Use of sold products	n/a
Category 12: End-of-life treatment of sold products	5 130
Category 13: Downstream leased assets	n/a
Category 14: Franchises	n/a
Category 15: Investments	n/a
Other	n/a

Part 3: Biogenic CO2 emissions data

Scopes and categories	Metric tons biogenic CO ₂
Direct biogenic CO ₂ emissions from owned/controlled operations	108 055
Indirect biogenic CO ₂ emissions from the use of purchased electricity, steam, heating, and cooling	n/a
Indirect biogenic CO ₂ emissions - Upstream	
Purchased goods and services	n/a
Capital goods	n/a
Fuel- and energy-related activities (not included in scope 1 or scope 2)	n/a
Upstream transportation and distribution	n/a
Waste generated in operations	n/a
Business travel	n/a
Employee commuting	n/a
Upstream leased assets	n/a
Other	n/a
Indirect biogenic CO ₂ emissions - Downstream	
Downstream transportation and distribution	n/a
Processing of sold products	n/a
Use of sold products	n/a
End-of-life treatment of sold products	n/a
Downstream leased assets	n/a
Franchises	n/a
Investments	n/a
Other	n/a

Part 4: Description of methodologies and data used

Scope	Description of the types and sources of data used to calculate emissions	Methodologies used to calculate or measure emissions, providing a reference or link to any calculation tools used
Scope 1	<p>Activity data (primary data):</p> <ul style="list-style-type: none"> • Fuel consumption (heavy oil) for heat production • Fuel consumption (diesel) for transportation and logistics • Leased company cars: estimated kilometers driven (30.000km/a/car) • Own heat production from wood • Own electricity production from wood 	<p>Description of the methodologies:</p> <ul style="list-style-type: none"> • Calculation has been made in the OneClick LCA GHG Reporting tool. • Operating countries (Finland, Poland) are covered in the calculation. • Fuel consumption from purchase invoices • Own electricity production from electricity reports



	<p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> • Fuel consumption (heavy oil) for heat production: Heavy fuel oil, combustion, (net calorific value) commercial. Base Carbone, 2014. 0.28kg CO₂e/kWh • Fuel consumption for transportation and logistics: <ul style="list-style-type: none"> - Domestic fuel oil, combustion. Base Carbone, 2014. 2.62kg CO₂e /l. - Petrol 98E5. One Click LCA 2016. 2.35kg CO₂e /l, biogenic 0.0754kg CO₂e /l - LPG Liquefied Petroleum Gas for vehicles. Base Carbone 2014. 2.96kg CO₂/kg. • Own heat and electricity production from wood: <ul style="list-style-type: none"> - Woodchips, combustion, (net calorific value) 25% humidity, Base carbone 2014. 0.013kg CO₂e /kWh, biogenic 0.38kg CO₂e /kWh - Wood pellets, combustion 8% humidity. Base Carbone 2014. 0.051kg CO₂e /kg, biogenic 1.69kg CO₂e /kg. • Fuel consumption in leasing cars: Cars (by size) – average car, petrol. DEFRA, 2020. 0.17kg CO₂e /km 	<ul style="list-style-type: none"> • Emission factors are chosen from the OneClick LCA software to provide the best available representation of the activity and geographical area.
<p>Scope 2</p>	<p>Activity data (primary data):</p> <ul style="list-style-type: none"> • Electricity: total electricity consumption deducted by own electricity production <p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> • Electricity, market-based (Finland): Electricity, Finland, residual mix. Ecoinvent, 2022. 0,215kg CO₂e /kWh • Electricity, location-based (Finland): Electricity, Finland. One Click LCA, 2022. 0,066kg CO₂e /kWh • Electricity, market-based (Poland): Electricity, Poland, residual mix. Ecoinvent, 2019. 0,287kg CO₂e /kWh • Electricity, location-based (Poland): Electricity, Poland. Ecoinvent, 2022. 0,312kg CO₂e /kWh 	<p>Description of the methodologies:</p> <ul style="list-style-type: none"> • Operating countries (Finland, Poland) are covered in the calculation. • Electricity consumption from EnerKey Portal (Finland) or purchase invoicing (Poland) • Location-based emission factors from average electricity in Finland and Poland • Market-based emission factors are residual mix factors in Finland and Poland since there were no contractual instruments with guaranteed origin.

Scope and category	Description of the types and sources of data used to calculate emissions	Description of the data quality of reported emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions	Percentage of emissions calculated using data obtained from suppliers or other value chain partners
Upstream scope 3 emissions				
Category 1: Purchased goods and services	<p>Activity data (primary data):</p> <ul style="list-style-type: none"> • Wood raw material from wood procurement system • Other raw materials (glue, coatings, paints, plastics and metals) from suppliers • Packaging materials from suppliers • Spare parts, lubricants and other materials are based on their economic value <p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> • Wood: <ul style="list-style-type: none"> - Market for sawlog, softwood. Ecoinvent 2019. 18.96kg CO₂e /m³ - Market for bundle, energy wood. Ecoinvent 2019. 0.0661kg CO₂e /kg 	Good	<p>Description of the methodologies:</p> <ul style="list-style-type: none"> • Average-data-method: data collected on the mass or other relevant unit and multiplying by the relevant average emission factor • Operating countries (Finland, Poland) are covered in the calculation. <p>Assumptions:</p> <ul style="list-style-type: none"> • Raw materials, packaging materials and other materials used in the factories were considered the most relevant. Purchased services and office equipment etc. are not included. • No emission factors were found for impregnated glue papers, so the emission factors of paper and resin were combined. 	90%



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	<ul style="list-style-type: none"> - Birch plywood, phenol coated. RTS 2019. 438kg CO₂e /m³. - Birch plywood, uncoated. RTS 2019. 291kg CO₂e /m³. • Other raw materials: <ul style="list-style-type: none"> - Water-borne white alkyd/acrylic primer paint. EPF Norge 2022. 1.9kgCO₂e/kg. - Plastic element (PP). AIJ 2023. 1.43kg CO₂e / kg - Steel bar, stainless steel. InfraCO₂ 2022. 3.8kg CO₂e / kg. - • Packaging materials: <ul style="list-style-type: none"> - Aluminium foil. Syke 2020. 14.4kg Co₂e/kg - Market for packaging film. Ecoinvent 2019. 3.04kg Co₂e/kg - Cardboard recycled manufacture. Base Carbone 2018. 670kg Co₂e/ton - Softwood timber. RTS 2021. 30.2kgCO₂e/m³. - Eur-flat pallet production. Ecoinvent 2019. 6.86kg CO₂e /unit. • Spare parts, lubricants and other materials: Machinery and equipment. DEFRA, 2014. 0,49 kg CO₂e /euro. 			
Category 2: Capital goods	Activity data (primary data):	Poor	Description of the methodologies:	0%

	<ul style="list-style-type: none"> Economic value of additions to capital goods <p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> Machinery and equipment. DEFRA, 2014. 0,49 kg CO₂e /euro. 		<ul style="list-style-type: none"> Average-data-method: data collected on the economic value and multiplying by the available average emission factor Operating countries (Finland, Poland) are covered in the calculation. 	
Category 3: Fuel- and energy-related activities (not included in scope 1 or scope 2)	<p>Activity data (primary data):</p> <ul style="list-style-type: none"> See Scope 1 and 2 emission sources and data used to calculate emissions. <p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> Electricity, upstream emissions (Finland): Electricity, Finland. One Click LCA, 2022. 0,15kg CO₂e /kWh Fuel upstream emissions: Heavy fuel oil, upstream, (net calorific value) commercial. Base Carbone, 2014. 0,0453kg CO₂e /kWh 	Good	<p>Description of the methodologies:</p> <ul style="list-style-type: none"> Scope 1 and 2 emissions used multiplying by upstream emission factors (A1-A3). Operating countries (Finland, Poland) are covered in the calculation. <p>Assumptions:</p> <ul style="list-style-type: none"> Distribution loss is less than 2% on average in Finland (Fingrid, 2023) -> 2% used in calculation Upstream emissions of wood biofuels from side products are included in Category 1 logs as raw materials. 	90%
Category 4: Upstream transportation and distribution	<p>Activity data (primary data):</p> <ul style="list-style-type: none"> Outsourced transport services inside factory sites: fuel consumption from suppliers. Outsourced transport services between factory sites: fuel consumption based on kilometers driven 	Good	<p>Description of the methodologies:</p> <ul style="list-style-type: none"> Average-data-method: data collected on the fuel consumption or kilometers driven and multiplying by the relevant emission factor Operating countries (Finland, Poland) are covered in the calculation. 	100%

	<p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> • Domestic fuel oil. Base Carbone, 2014. 3.19kg CO₂e/l. • Market for transport, freight, lorry 16-32 metric ton, euro4. Ecoinvent 2019. 0,16kg CO₂e /tonkm. 		<p>Assumptions:</p> <ul style="list-style-type: none"> • Harvesting and transport of wood raw material is included in Category 1 Goods and services 	
<p>Category 5: Waste generated in operations</p>	<p>Activity data (primary data):</p> <ul style="list-style-type: none"> • Waste amounts: Waste data is collected in tonnes from Koskisen's waste operators • Waste water: consumption data in cubic meters based on monthly readings of flow meters <p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> • Mixed waste: OneClickLCA 2016. 0.37kg CO₂e /kg • Hazardous waste: OneClickLCA 2016. 2.51kg CO₂e /kg • Waste water: Water treatment. DEFRA 2020. 0.71kg CO₂e /m³ • Treatment of waste polyethylene. Ecoinvent 2019. 0.26kg CO₂e/kg 	<p>Fair</p>	<p>Description of the methodologies:</p> <ul style="list-style-type: none"> • Average-data-method: data collected on the mass and multiplying by the relevant emission factor • Operations in Finland and Poland are covered in the calculation. <p>Assumptions:</p> <ul style="list-style-type: none"> • Average emission factors for mixed waste and hazardous waste, not reporting for recycled waste separately. 	<p>90%</p>



	<ul style="list-style-type: none"> • Treatment of waste reinforcement steel. Ecoinvent 2019. 0.0569kg CO₂e/kg. • Wood waste. OneClickLCA 2016. 0.009kg CO₂e /kg • Plastic waste. OneClickLCA 2016. 2.38kg CO₂e /kg 			
<p>Category 6: Business travel</p>	<p>Activity data (primary data):</p> <ul style="list-style-type: none"> • Travel volume per transportation mode (car, flight in Europe and outside Europe, train, ship, bus, taxi, subway) from travel invoice system M2 • Hotel nights are not included (not relevant) <p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> • Passenger car – average 2018. Base Carbone 2020. 0,12 kg CO₂e/pkm • Train (passengers), Base Carbone 2020. 0,0453 kg CO₂e/pkm • Ship, average. LCA for European transportation based on VTTs Lipasto, OneClickLCA 2017. 0,38 kg CO₂e/km • Bus, average diesel. LCA for European transportation based on VTTs Lipasto, OneClickLCA 2017. 0,0659 kg CO₂e/km 	<p>Fair</p>	<p>Description of the methodologies:</p> <ul style="list-style-type: none"> • Car travel according to reported kilometer allowances • The GHG emissions of flights are directly from the travel agency and calculated using the DEFRA method. • Train, ship, bus, taxi, subway air, rail and boat travel are calculated with average distances of in each group. <p>Assumptions:</p> <ul style="list-style-type: none"> • Average travel distances for different modes of transport (excluding flights) are based on assumptions: <ul style="list-style-type: none"> - Train 100km - Ship 87km - Taxi 10km - Bus 20km - Subway 10km 	<p>40%</p>



	<ul style="list-style-type: none"> • Subway, tram, trolley bur Urban area. Base Carbone 2020. 0,003 kg CO2e/pkm 			
Category 7: Employee commuting	<p>Activity data (primary data):</p> <ul style="list-style-type: none"> • Emission calculations are based on the following information: average distance, transportation mode used (car as an assumption for lack of information), number of blue-collar and white-collar employees and percentage of remote work for white-collar employees <p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> • Passenger car 2018 Gazoline engine. Base Carbone 2020. 0,2 kg CO2e/pkm 	Fair	<p>Description of the methodologies:</p> <ul style="list-style-type: none"> • Employee commuting includes travelling between homes and working places. The average distance is calculated from which municipalities the employees work and their average distance from the factory sites. • Operating countries (Finland, Poland) are covered in the calculation. <p>Assumptions:</p> <ul style="list-style-type: none"> • Transportation mode is assumed to be passenger car with gasoline engine for all employees for lack of statistics. 	0%
Category 8: Upstream leased assets	n/a	n/a	n/a	n/a
Other	n/a	n/a	n/a	n/a



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Scope and category	Description of the types and sources of data used to calculate emissions	Description of the data quality of reported emissions	Description of the methodologies, allocation methods, and assumptions used to calculate emissions	Percentage of emissions calculated using data obtained from suppliers or other value chain partners
Downstream scope 3 emissions				
Category 9: Downstream transportation and distribution	<p>Activity data (primary data):</p> <ul style="list-style-type: none"> • Outsourced freight services to customers: distance travelled by type of transport (container ship, semi-trailer lorry, bulk ship, plane) <p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> • Container ship: Market for transport, freight, sea, container ship. Ecoinvent 2019. 0,0094kg CO2e /tonkm. • Semi-trailer lorry: Market for transport, freight, lorry 16-32 metric ton, euro4. Ecoinvent 2019. 0,16kg CO2e /tonkm. • Bulk ship: Market for transport, freight, sea, bulk carrier. Ecoinvent 2019. 0,0065kg CO2e /tonkm • Plane: Market for transport, freight,air craft, long haul. Ecoinvent 2019. 0,38kg CO2e /tonkm 	Poor	<p>Description of the methodologies:</p> <ul style="list-style-type: none"> • Average-data-method: data collected on the distances transported and multiplying by the relevant emission factor • Operating countries (Finland, Poland) are covered in the calculation. <p>Assumptions:</p> <ul style="list-style-type: none"> • Distances are rough estimates to different countries 	0%



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Category 10: Processing of sold products	n/a	n/a	n/a	n/a
Category 11: Use of sold products	n/a	n/a	n/a	n/a
Category 12: End-of-life treatment of sold products	<p>Activity data (primary data):</p> <ul style="list-style-type: none"> • All products sold in tonnes <p>Emission factors (secondary data):</p> <ul style="list-style-type: none"> • Wood waste. One Click LCA. 0,009kg CO2e /kg • Plastic waste. One Click LCA. 2.38kg CO2e/kg • Building waste Metals. Base Carbone 2019. 4.31kg CO2e/ton 		<p>Description of the methodologies:</p> <ul style="list-style-type: none"> • The mass of sold products multiplied by the average end-of-life emission factor of wood waste • Operating countries (Finland, Poland) are covered in the calculation. <p>Assumptions:</p> <ul style="list-style-type: none"> • Biogenic emissions not accounted for in this calculation but is to be reported when suitable emission factor becomes available. 	0%
Category 13: Downstream leased assets	n/a	n/a	n/a	n/a
Category 14: Franchises	n/a	n/a	n/a	n/a
Category 15: Investments	n/a	n/a	n/a	n/a
Other	n/a	n/a	n/a	n/a



Part 5: Greenhouse gas emissions in the base year

Greenhouse gas emissions in the base year 2022.

Scopes and categories	Metric tons CO ₂ e
Scope 1: Direct emissions from owned/controlled operations	7 576
Scope 2: Indirect emissions from the use of purchased electricity, steam, heating, and cooling location-based	4 674
Scope 2: Indirect emissions from the use of purchased electricity, steam, heating, and cooling market-based	14 676
Upstream scope 3 emissions	
Category 1: Purchased goods and services	93 550
Category 2: Capital goods	9 942
Category 3: Fuel- and energy-related activities (not included in scope 1 or scope 2)	11 977
Category 4: Upstream transportation and distribution	3 586
Category 5: Waste generated in operations	990
Category 6: Business travel	228
Category 7: Employee commuting	974
Category 8: Upstream leased assets	n/a
Other	n/a
Downstream scope 3 emissions	
Category 9: Downstream transportation and distribution	38 723
Category 10: Processing of sold products	n/a
Category 11: Use of sold products	n/a
Category 12: End-of-life treatment of sold products	6 137
Category 13: Downstream leased assets	n/a
Category 14: Franchises	n/a
Category 15: Investments	n/a
Other	n/a

Part 6: Optional Information

Greenhouse gas emissions by business segment and location.

Segments and locations	Metric tons CO ₂ e
Scope 1	
Timber Industry segment	1 618
Panel Industry segment	5 031
- Järvelä, Finland	4 663



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- Hirvensalmi, Finland	317
- Poland	52
Other/common	120
Scope 2 location-based	
Timber Industry segment	1 476
Panel Industry segment	3 252
- Järvelä, Finland	2 895
- Hirvensalmi, Finland	111
- Poland	246
Other/common	0
Scope 3	
Timber Industry segment	57 880
Panel Industry segment	96 165
- Järvelä, Finland	91 636
- Hirvensalmi, Finland	1 241
- Poland	3 288
Other/common	2 203

Greenhouse gas removals through carbon sequestration in wood products. Calculated by multiplying sales volumes with biogenic global warming potential (GWP-biogenic) kg CO₂e from environmental product declarations (EPD).

Carbon storage in wood products	Metric tons CO ₂ e
Timber Industry segment	-157 099
Panel Industry segment	-224 603
Total	-381 701
Carbon storage compared with carbon emissions	2,28