

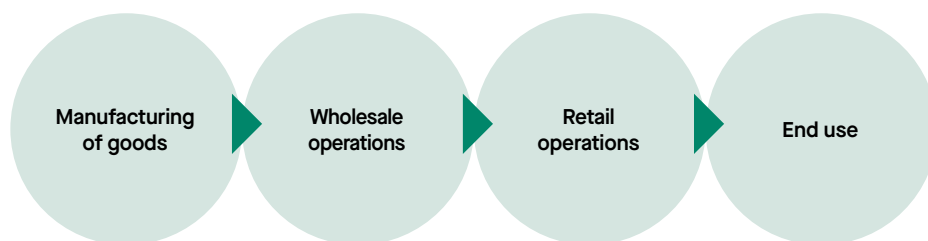
**Wholesale and retail trade -
Wholesale of food, beverages
and tobacco &
Retail sale in non-specialised
stores with food, beverages or
tobacco predominating**

CLIMATE & EFFICIENCY INVESTMENTS



Decarbonising wholesale and retail trade: A strategic imperative

Wholesale and retail activities form a critical backbone of global trade, with MSMEs alone accounting for around **68% of employment and 63% of value added**¹ in these sectors across the EU. These businesses operate energy and logistics intensive networks where transport, warehousing, and store operations drive significant operational emissions. By enhancing logistics efficiency, improving energy performance across warehouses and stores, and integrating lower emission technologies, they can play a pivotal role in accelerating the transition towards a net zero future.



From a greenhouse gas (GHG) perspective, **wholesale and retail activities (ISIC Codes 4630 and 4711)** generate both Scope 1 and Scope 2 emissions.

Key emissions drivers in wholesale and retail activities

Scope 1 – Direct emissions

Scope 1 emissions in wholesale and retail primarily stem from on-site fuel combustion in warehouses and retail outlets – such as heating systems, backup generators, and company owned transport fleets, forklifts, and other mobile equipment used for internal logistics. These direct emissions also include refrigerant leakage from cooling and freezing systems operating across storage facilities and retail environments.

Scope 2 – Indirect emissions

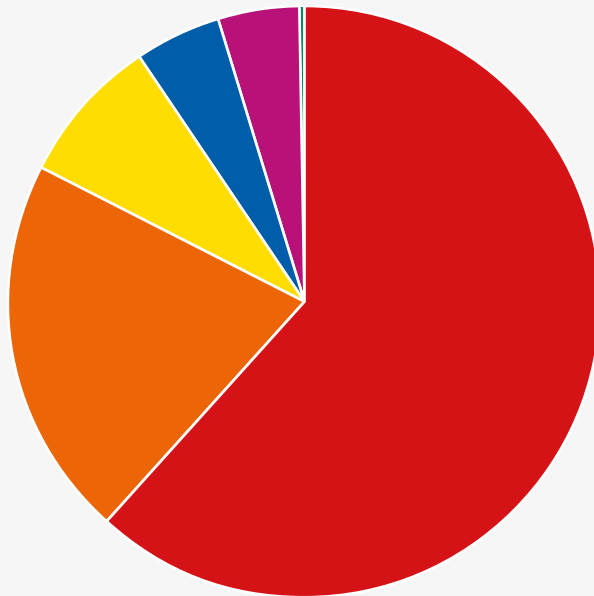
Scope 2 emissions for wholesale and retail activities arise from purchased electricity used to operate warehouses, distribution centres, and retail stores, with major loads driven by refrigeration and freezing systems, lighting, HVAC, and other essential operational equipment. Given the energy intensive nature of cooling and long operating hours, electricity consumption represents a significant share of total operational emissions in these segments.

¹ JRC Publications Repository - Annual Report on European SMEs 2024/2025, SME performance review



Key CO₂ emissions drivers

Wholesale and retail trade activities



Key emissions drivers²

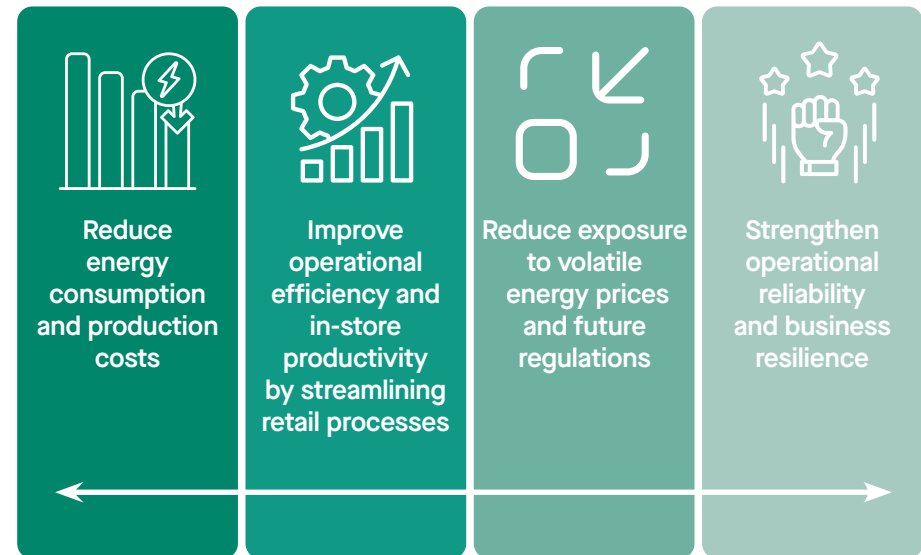
- Electricity 61.8%
- Natural gas 20.9%
- Oil and petroleum products 8.1%
- Renewable energies 4.6%
- Heat 4.5%
- Other fuels 0.2%

Source: Eurostat (131943.pdf)

Why decarbonisation matters

Enhancing energy efficiency and reducing on-site emissions can help wholesale and retail businesses lower operational costs and manage energy price volatility. Key energy-intensive operations include refrigeration, lighting, HVAC, and transport logistics. By investing in energy-efficient equipment, optimising warehouse and store operations, and integrating renewable energy solutions, companies can cut emissions, improve operational efficiency, and strengthen their market competitiveness.

By reducing Scope 1 and 2 emissions, specialised retail businesses can:



Decarbonisation Roadmap

Wholesale and retail trade				
Investment measure	Energy cost savings (%)	Payback period (years)	CO ₂ reduction potential	Benefits
CHP combustion engine	20%	3 - 4	✓	Combined heat and power (CHP) engines generate electricity and heat from a single fuel, boosting efficiency, reducing energy waste, and lowering emissions. When powered by low-carbon fuels like biogas or hydrogen, they further support a cleaner energy system.
CHP gas turbine	20%	3 - 4	✓	CHP gas turbines support net-zero goals by generating electricity and capturing waste heat, boosting efficiency. Powered by low-carbon fuels like biogas or hydrogen, they reduce emissions while providing reliable power and heat.
CHP fuel cell	20%	3 - 4	✓	CHP fuel cells support net-zero goals by generating electricity with high efficiency and supplying useful heat. Their low carbon intensity, quiet operation, and low maintenance enhance energy efficiency compared to conventional combustion systems.
Commercial refrigerating appliances	20% - 30%	3 - 4	✓	Efficient commercial refrigerating systems store perishable goods while minimising energy use through high-efficiency components, smart controls, and low-GWP refrigerants. These improvements reduce electricity consumption and greenhouse gas emissions, supporting decarbonisation goals.
Cooling and freezing chambers	20% - 30%	4 - 5	✓	Cooling and freezing chambers maintain precise low-temperature conditions essential for product quality and safety. Their efficient operation reduces energy use, promoting more sustainable temperature-controlled processes.
Packaging machine	20% - 30%	No estimates	✓	Packaging machines ensure precise, hygienic, and consistent filling and sealing of goods. They maintain product quality and safety while minimising material waste. Their energy-efficient operation reduces electricity use, promoting sustainable production.
Battery electric vehicles (BEVs)	50%	5 - 6	●	Electric vehicles offer higher energy efficiency through advanced battery systems and regenerative braking, reducing overall energy consumption during operation. They offer a clean solution for transporting products, reducing fuel costs, and improving operational sustainability.

Decarbonisation Roadmap

Investment measure	Energy cost savings (%)	Payback period (years)	CO ₂ reduction potential	Benefits
Electric forklifts	50%	2 - 3	●	Electric forklifts are battery-powered material-handling vehicles used to move ingredients, trays, and finished products within bakery facilities. They offer high energy efficiency by converting stored electrical energy directly into motion with minimal losses. This efficiency reduces fossil fuel use and CO ₂ emissions.
PV self-consumption	Up to 100% based on the system capacity and electricity demand	6 - 7	✓	A PV (photovoltaic) system converts sunlight into electricity for on-site use. It provides clean, renewable energy to power production, refrigeration, and other operations, reducing reliance on grid electricity and lowering operational costs. Pairing a PV system with battery storage enables multi-shift companies to rely on renewable electricity while reducing exposure to electricity price volatility.
Li-ion batteries	No estimates	4 - 8	No estimates	Lithium-ion (Li-ion) batteries are energy storage systems that store electricity and release it when needed. Their energy-saving potential comes from maximising the use of on-site renewable electricity, reducing reliance on grid power during peak periods. This not only supports emissions reduction but also delivers tangible cost savings through improved energy management and lower operating expenses.
Industrial process chiller	20% - 30%	Over 10 years	●	Industrial process chillers provide precise temperature control to maintain product quality and protect equipment. Their efficient operation reduces energy consumption, promoting more sustainable industrial operations.
Water source heat pumps	20% - 30%	Over 10 years	●	Water source heat pumps are systems that use water as a medium to efficiently transfer heat for heating and cooling. They help companies reduce energy consumption and operational costs while lowering greenhouse gas emissions.
Air-to-air heat pumps	15% - 25%	Over 10 years	●	Air-to-air heat pumps provide efficient heating and cooling by transferring energy rather than generating it. Their high efficiency reduces electricity consumption, contributing to more sustainable building operations.
Air-to-water heat pumps	10% - 20%	Over 10 years	●	Air-to-water heat pumps are systems that extract heat from the air to provide efficient heating and hot water. They help companies reduce energy use, cut costs, and lower emissions.
Ground source heat pumps	15% - 25%	Over 10 years	●	Ground source heat pumps are systems that use the stable temperature of the ground to provide efficient heating and cooling. They help companies reduce energy consumption, lower costs, and cut greenhouse gas emissions.

Decarbonisation Roadmap

Investment measure	Energy cost savings (%)	Payback period (years)	CO ₂ reduction potential	Benefits
Ventilation system	10% - 20%	Over 10 years		A ventilation system manages the flow of air by bringing in fresh air and expelling stale or contaminated air to maintain a healthy indoor environment. By reducing energy use and improving air quality, efficient ventilation systems support lowering a facility's overall carbon footprint.
Building insulation materials	50%	4 - 5		Building insulation reduces heating and cooling costs, boosts energy efficiency, and supports decarbonisation by lowering emissions and environmental impact.
LED lighting	5% - 10%	5 - 6		LED lighting provides high-efficiency illumination with lower energy consumption compared to conventional lighting solutions. Its reduced electricity demand supports decarbonisation and enhances building performance.

For more detailed information on how to reduce costs and lower your CO₂ footprint, along with additional measures tailored for your business, contact the bank.

