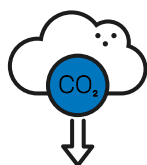


Net zero: Steel

7% of human-caused greenhouse gas emissions come from the production of iron and steel.¹

What does the **steel sector** need to do to reach net zero?

LGIM will vote and implement investment sanctions against companies falling short of our climate expectations. LGIM expects companies' boards to oversee and publicly disclose answers to the following:



Net-zero commitment

- Does the company have a comprehensive target for net zero by 2050 or earlier, covering scopes 1, 2 and material scope 3 emissions?²
- Has the company made a commitment to certify/certified this target with the SBTi or other external independent parties as they develop?
- Does the company have a net-zero transition plan that includes short- and medium-term targets?³



Strategy

- What are the actions and investments the company intends to take to reach net zero, and the contribution of each action towards meeting its targets?⁴
- Is executive remuneration aligned with the company's short- and/or medium-term emission targets, as set out in the net-zero transition plan?
- Does the company's decarbonisation strategy address and incorporate the impact of the Just Transition?



Resilience

- Has the company analysed the physical climate risks to its assets and operations and evidenced measures to manage these?
- Has the company analysed the resilience of its business model in – and alignment to – climate scenarios, including the IEA's net-zero by 2050 scenario?



Targets

- Does the company have a target to grow the production of/revenue from low/zero-carbon steel?
- Does the company have targets to increase production rates of recycled steel?



Collaboration

- How is the company working collaboratively across its value chain to reduce emissions? (e.g. customers, finance sector, strategic R&D partnerships, sector initiatives).
- How is the company supporting the development of international certification standards for 'green steel' production and committing to adhere to those standards?
- Is the company advocating for meaningful policy action, including from regulators, to meet global net zero targets (e.g., carbon pricing)?



Red lines

- Does the company have a net-zero operational emissions target?
- Does the company disclose its climate-related lobbying activities, including trade association memberships, and explain the action it will take if the lobbying activities of these associations are not in line with the Paris Agreement?

1. IEA (2017) Energy Technology Perspectives

2. Aiming to cover all segments of the business, as articulated within the GHG protocol guidance.

3. Short-term refers to 2022 - 2025, medium-term 2026-2035 and long-term 2036-2050.

4. E.g., scrap electric arc furnace (EAF) processes, enhancing efficiency of production processes and final products, low-emission direct reduced iron (DRI)-EAF capacity (including hydrogen based), CCS/CCUS, etc.

Further areas for company consideration

Biodiversity expectations

Why? The climate and nature crises are inextricably linked.⁵ Net zero requires both emission avoidance and sequestration. Functioning natural systems are essential to this but increasingly vulnerable due to climate change.

LGIM's expectations: An assessment of the impacts and dependencies on nature and biodiversity, and appropriate mitigation actions.

Sector-specific considerations: Indirect impacts could result from upstream mining activities. Direct impacts from the manufacturing process include: water use, wastewater discharge and other pollutants.



Company levers

- Growing consumer demand for low-carbon steel
- Circularity
- Energy efficiency
- Alternative reductants in primary production
- Increased secondary production and improved demand management
- Carbon capture and storage

Government policies

- Carbon pricing and taxation (and border adjustments)
- Green steel minimum standards and labels across the value chain
- Low-carbon public procurement
- Incentives for hydrogen infrastructure
- Increased recycling and support for circular design



Challenges

'Carbon leakage' and competitiveness
 High costs of new technologies and infrastructure in low-margin industry
 Availability of low-cost renewable energy/ biomass reductants/ green hydrogen
 Carbon capture and storage



Opportunities

Steel as key enabler of emissions reductions (e.g. light-weighting, production of wind turbines); increased partnerships across sectors
 High recycling potential
 Green-hydrogen-based iron production

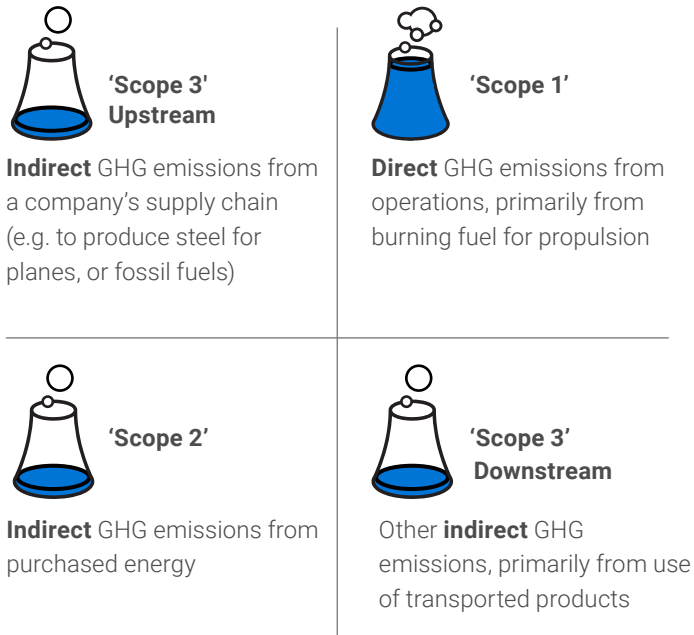


What is needed?

Company leadership	Research and innovation	Consumer behaviour
Investment and R&D for net zero across value chain	Electrolysis: low-temperature ('electrowinning') and high-temperature (using molten oxides)	Willingness to pay for low-carbon products

5. UN IPCC-IPEBS, [Biodiversity and Climate Change workshop report \(2021\)](#)

Sources of emissions



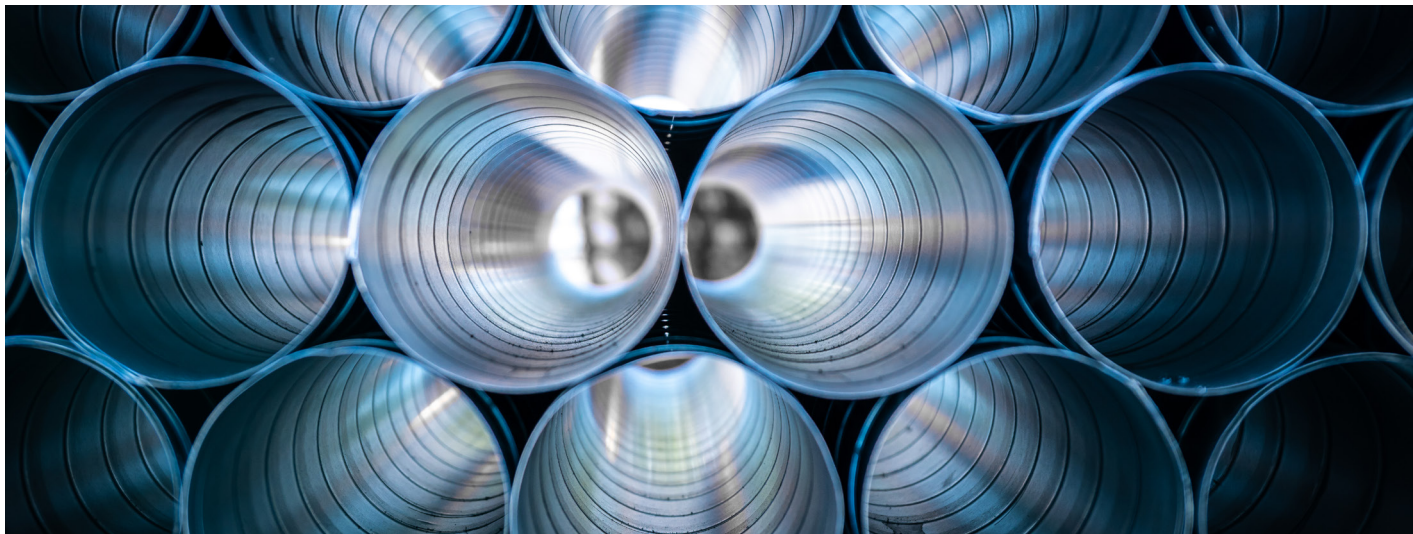
Source: UNEP (2019)

'Just Transition' considerations

Potential implications for employees, supply chain, customers, and communities from the transition to a lower-carbon business model

Physical risk impacts

Disruption to production facilities from extreme weather
Water availability



For more information and to see how companies are rated

[Climate Impact Pledge 2022 - Net zero: going beyond ambition \(lgim.com\)](https://www.lgim.com/climate-impact-pledge-2022-net-zero-going-beyond-ambition)

[LGIM Climate Impact Pledge score](#)

[LGIM Climate Impact Pledge](#)

Important information

Source: LGIM as at August 2022. The value of an investment and any income taken from it is not guaranteed and can go down as well as up, you may not get back the amount you originally invested. The above information does not constitute a recommendation to buy or sell any security.