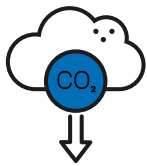


Net-zero: Chemicals

6.3% of human-caused greenhouse gas emissions come from the operations of the chemicals sector.¹

What does the **chemicals 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:



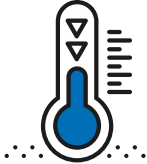
Net-zero commitment

- 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 it develops?
- Does the company have a net-zero transition plan that includes short- and medium-term targets?³



Strategy

- What are the actions and investments involved in the company's plan to reach net-zero, and what is the contribution of each action towards meeting its targets?⁴
- How is the company developing alternative, low emission products?
- Is executive remuneration aligned with the company's short- and/or medium-term emissions targets, as set out in the net-zero transition plan?



Resilience

- Has the company analysed its business model resilience to climate-related risks and opportunities using scenario analysis (including the IEA's net-zero by 2050 scenario and a 'business as usual' scenario) and disclosed how the output has influenced its strategy?
- Has the company analysed the physical climate risks to its assets, operations, and value chain, including potential financial impacts, and evidenced measures to mitigate or adapt to them?



Targets

- Does the company have targets to electrify its energy consumption, and for that electricity to come from renewable sources?
- Does the company have a target to switch to emission-neutral feedstocks?⁵
- Does the company have a target to increase recycled plastic feedstocks?⁶



Collaboration

- How is the company working collaboratively across its value chain to reduce emissions (e.g. customers, utilities sector, strategic R&D partnerships, sector initiatives etc)?
- Is the company advocating meaningful policy action, including from regulators, to meet global net-zero targets (e.g. with carbon pricing)?



Red lines

- Does the company have a net-zero operational emissions target?
- Has the company disclosed or committed to calculate and disclose its material Scope 3 emissions?
- Does the company disclose its climate-related lobbying activities, including trade association memberships, and explain the action it will take if these associations are not in line with the Paris Agreement?

* The applicability of the expectations varies depending on companies' business models

1. World Resources Institute (2020) [World Greenhouse Gas Emissions: 2020](#).

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., emissions neutral feedstocks, renewable electrification, green hydrogen, circular economy, etc.

5. E.g., green hydrogen-based feedstocks- green ammonia (for agrochemicals), and green methanol (for polymers & HVCs).

6. For companies involved in the manufacturing of polymers and HVCs.

Further areas for company consideration

Nature expectations

Why? The climate and nature crises are inextricably linked.⁵ Climate change is one of the five direct drivers of nature change. Net-zero requires both emission avoidance and sequestration. Therefore, the inter-dependencies between climate and nature are a critical factor in the transition.

LGIM’s expectations: As part of a climate transition plan, companies should integrate an assessment of the related-nature risks and opportunities, impacts and dependencies, and appropriate mitigation actions.⁶

Sector-specific considerations: Pollution, including from chemicals, is one of the primary drivers of biodiversity loss. Direct impacts could result from manufacturing and polluting effluent. Indirectly – from the use and disposal of chemical products.



Company levers

- Plastic alternatives
- Collaboration and research and development (R&D) across value chain
- Changes to raw materials and feedstocks, including use of biogenic materials
- Decarbonisation of power and heat
- Energy and resource efficiency
- Recycling and waste treatment

Government policies

- Carbon pricing
- Support for renewables
- R&D assistance for alternative process (including cost reductions in green electricity)
- Increased waste collection and recycling
- Policies to encourage decentralised energy production and circular economy



Challenges



Opportunities



What is needed?

<p>Competitiveness</p> <p>High costs of feedstocks (e.g. biomass) and electricity requirements for low-carbon processes</p> <p>Commercialisation of new technology</p> <p>Carbon capture and storage</p>	<p>Key enabler of the low-carbon transition (catalysts, cathodes, light-weight materials)</p> <p>Efficiencies and new production methods</p> <p>Circular economy and partnerships</p>	<p>Company leadership</p> <p>Investment to reduce costs and energy requirements of low-carbon alternatives</p>	<p>Research and innovation</p> <p>Electricity-based processes</p> <p>Alternative materials</p> <p>Downstream pathways</p>	<p>Consumer behaviour</p> <p>Demand for sustainable materials</p>
--	---	---	--	--

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

6. [LGIM’s Nature Framework can be accessed here](#)

Sources of emissions



'Scope 3' Upstream

Indirect GHG emissions from companies' purchased goods and supply chain (highly reliant on oil and gas feedstocks)



'Scope 1'

Direct GHG emissions from energy-intensive operations, including ammonia and steam cracking



'Scope 2'

Indirect GHG emissions from purchased energy



'Scope 3' Downstream

Indirect GHG emissions from the processing and use of a company's products (e.g. planet-warming fluorocarbons)

Sources: IEA, DECHEMA, ICCA (2013).

'Just Transition' considerations

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

Alternatives to fertilisers/plastics may raise costs of food and other key commodities

Physical risk impacts

Disruption to global food supply

Weather-caused accidents (leaks, fires, explosions)

Water scarcity



For more information and to see how companies are rated

[LGIM Climate Impact Pledge score](#)

[LGIM Climate Impact Pledge](#)

Important information

Source: LGIM as at October 2024. The value of an investment and any income taken from it is not guaranteed and can go down as well as up, and the investor may get back less than the original amount invested.

© 2024 Legal & General Investment Management Limited. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, including photocopying and recording, without the written permission of the publishers. Legal & General Investment Management Ltd, One Coleman Street, London, EC2R 5AA Authorised and regulated by the Financial Conduct Authority. D004351