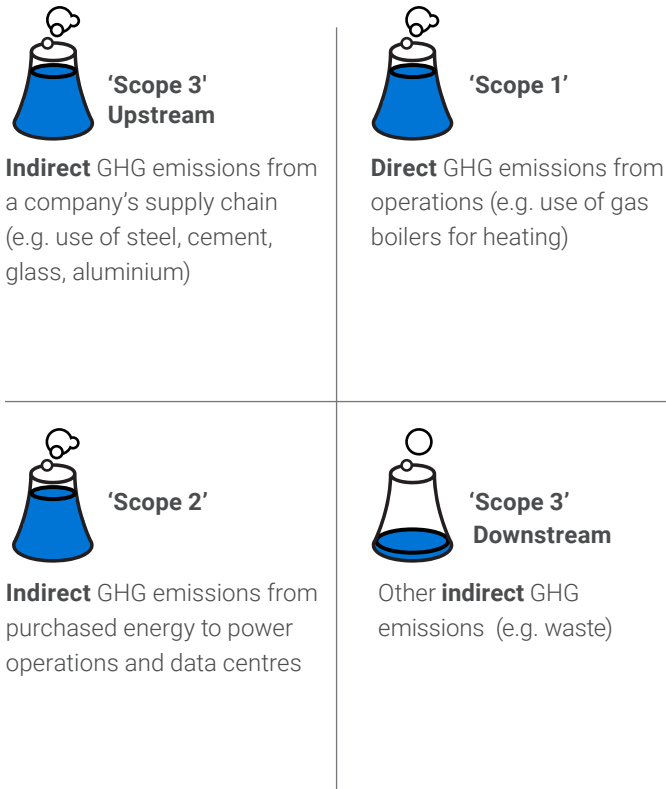


# Net zero: buildings

To prevent dangerous climate change, greenhouse gas emissions must reach net zero. What does the **building sector** need to do?

**17%** of human-caused GHG emissions come from buildings and construction

## Sources of emissions

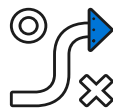


 Source: LGIM based off IEA (2019), UNEP (2019)



## Challenges

- Higher costs for lower-carbon materials
- Behavioural barriers and conflicting incentives between owners and occupants
- Policy coordination



## Opportunities

- Lower energy bills
- 'Green-collar' jobs and urban regeneration
- Improved tenant satisfaction
- Resilience to climate risks

## Companies

## Governments

Key levers	Key policies
Meeting consumer demand for (sustainable living)	Carbon pricing
Construction innovation for low-carbon new buildings	Building codes, energy and carbon standards
Owners retrofitting existing building stock	Low-carbon public procurement
Decarbonisation of power and heat	Incentives for low-carbon heat and power
Recycling and waste treatment	Increased waste collection and recycling



## Other environmental considerations

- Impacts on biodiversity and land
- Waste and water use

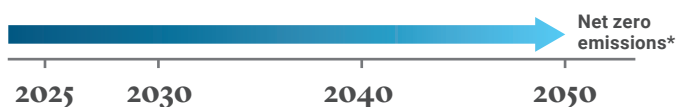
## Social impacts and the 'just transition'

- Affordability of shelter as basic human right
- Community impacts

## Physical risk impacts

- High vulnerability to extreme weather; costly adaptation
- Potentially uninsurable buildings in certain areas

### Decarbonisation effort



#### Easier to achieve

- Renewables, energy efficiency, recycling
- Conventional retrofits
- Building codes and appliance standards
- Heat pumps, district heating, biomethane and hydrogen blends

#### Possible with effort

- Embodied carbon in building materials
- Hydrogen and other new low-carbon heat and power sources
- Energy decentralisation

\*To be followed by reducing emissions of other GHGs such as methane to net zero

### What is needed?



#### Company leadership

- Investment and R&D across building life-cycle
- Net zero targets for building owners and developers



#### Research and innovation

- Deep retrofitting models for housing and commercial property
- Decarbonising steel & cement to reduce embedded CO2



#### Consumer behaviour

- Net zero public and private procurement
- Aligning incentives between costs borne by owners and beneficiaries

**LGIM will vote and implement investment sanctions against companies falling short of our climate expectations.**

### Real Estate Investment Trusts (REITs): How are we assessing companies' pathways to net zero?

<b>Net-zero commitment</b>	<ul style="list-style-type: none"> <li>Is the company committed to net zero emissions, both on an operational basis and in terms of embodied carbon?</li> <li>Has the company published a net-zero transition plan, including interim targets?</li> </ul>
<b>Strategy</b>	<ul style="list-style-type: none"> <li>How much capital is being committed to decarbonisation efforts?</li> <li>Is executive remuneration aligned with the net zero pathway?</li> </ul>
<b>Resilience</b>	<ul style="list-style-type: none"> <li>Is the company analysing the physical climate risks to its portfolio and evidencing measures to manage these?</li> </ul>
<b>Targets</b>	<ul style="list-style-type: none"> <li>Does the company have a target to achieve net-zero operational emissions?</li> <li>Has the company set out ambitions or targets for specific construction materials (e.g. steel, cement) in terms of reducing emissions, increasing percentage of recycled materials?</li> </ul>
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>Evidence of the company working collaboratively across its value chain, including with peers, to reduce emissions?</li> <li>Evidence of the company advocating for meaningful policy action?</li> </ul>
<b>Red lines</b>	<ul style="list-style-type: none"> <li>Net-zero operational emissions target</li> </ul>

## For more information...

Please see: [https://www.lgim.com/landg-assets/lgim/\\_document-library/responsible-investing/climate-impact-pledge-brochure-uk-eu-2021.pdf](https://www.lgim.com/landg-assets/lgim/_document-library/responsible-investing/climate-impact-pledge-brochure-uk-eu-2021.pdf)

#### Important information

**Source: LGIM as at September 2021. 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**

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