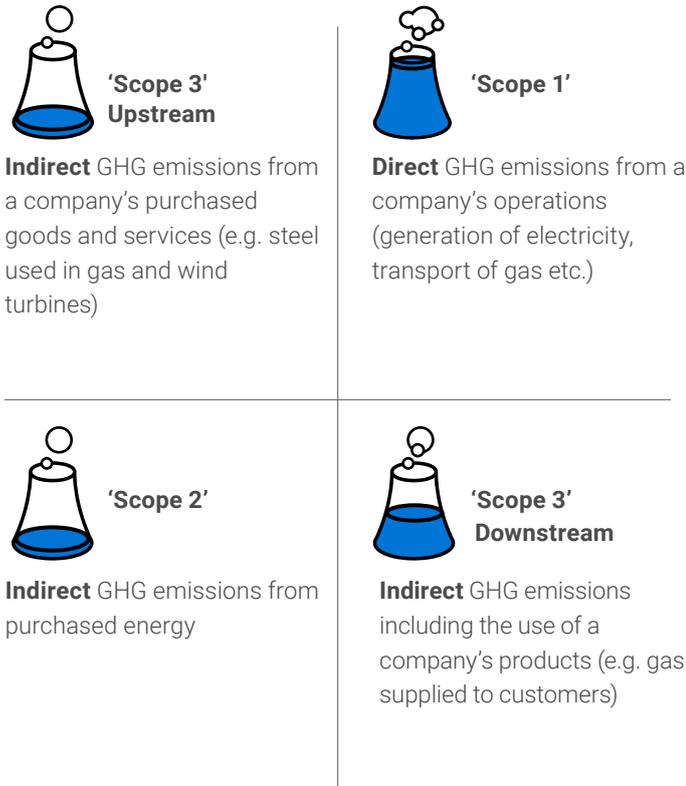


# Net zero: utilities

To prevent dangerous climate change, greenhouse gas emissions must reach net zero. What do **electric utilities** need to do?

**25%** of human-caused GHG emissions come from power generation

## Sources of emissions



 Source: Victor, Geels & Sharpe (2019)

## Challenges

- Storage and variability
- Infrastructure and markets designed around old, centralised model
- Lack of interconnection
- Public attitudes

## Opportunities

- Reduced costs for retail and corporate consumers
- Improved health and air quality
- Energy independence
- Job creation

## Companies

## Governments

Key levers	Key policies
Renewable energy	Country-wide electrification and emissions plans
Battery storage	Investments in grid and interconnections
Demand response software	Market reform and pricing (including carbon price) to encourage demand-led flexibility and decentralisation
Fossil fuel phase-out	Support for a just transition
Next-generation nuclear energy	Air quality and emissions standards



## Other environmental considerations

- Air quality
- Site restrictions
- Recycling of legacy renewables and nuclear waste disposal

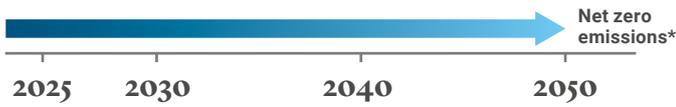
## Social impacts and the just transition

- Localised employment amid a shifting energy system

## Physical risk impacts

- Grid damage from extreme weather
- Spikes in energy demand from cooling and heating

## Decarbonisation effort



### Easier to achieve

Renewables and power storage

Phasing out coal

Hydrogen/biomethane into gas grids

Combined heat and power (CHP)

### Possible with effort

Power market reform and decentralisation

Electrification of heat

Carbon capture and storage (CCS) potentially combined with bioenergy

## What is needed?



### Company leadership

Investments for an orderly and swift transition

Technology adoption



### Research and innovation

Software  
Next-generation nuclear

CHP  
CCS



### Consumer behaviour

Growing demand for clean power from retail and corporate customers

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

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

## How are we assessing companies' net zero pathways?

<b>Net-zero Commitment</b>	<ul style="list-style-type: none"> <li>Does the company support the Paris Agreement target?</li> <li>Does the company have comprehensive targets for net zero by 2050 or earlier?</li> </ul>
<b>Strategy</b>	<ul style="list-style-type: none"> <li>Are capex decisions analysed according to a well-below 2°C trajectory?</li> <li>Evidence of R&amp;D in / acquisitions of low-carbon technology?</li> <li>Is executive remuneration aligned with the net zero pathway?</li> </ul>
<b>Resilience</b>	<ul style="list-style-type: none"> <li>Exposure to physical risk?</li> <li>Resilience of business model in – and alignment to – climate scenarios?</li> </ul>
<b>Targets</b>	<ul style="list-style-type: none"> <li>Does the company have targets to reduce other (non-carbon) pollutants?</li> </ul>
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>Evidence of the company working collaboratively across its value chain 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>Plan for a coal phase-out</li> </ul>

## For more information...

Please see: <https://www.lgimblog.com/categories/esg-and-long-term-themes/climate-impact-pledge>

### Important information

Source: LGIM as at September 2020. 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

© 2020 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.