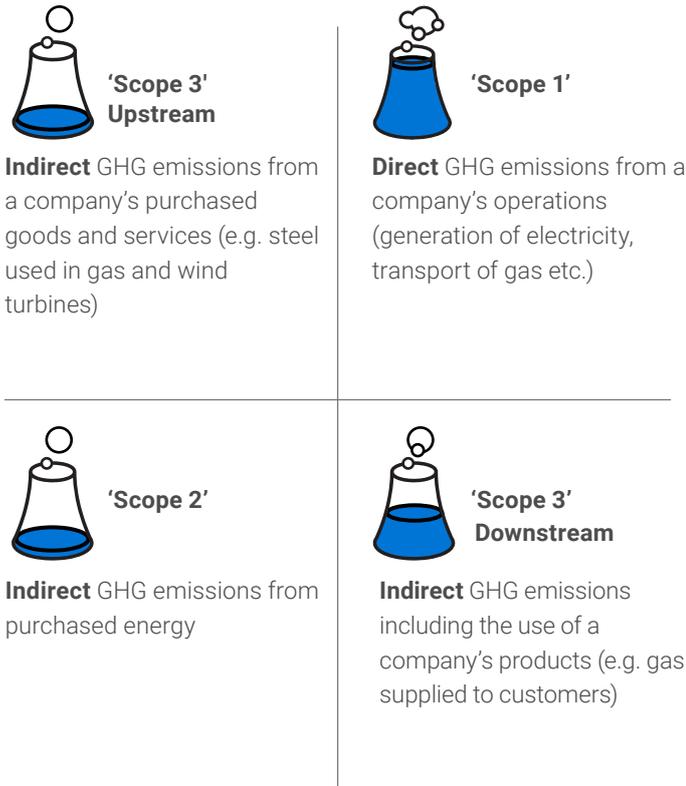


Net zero: electric utilities

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
<ul style="list-style-type: none"> Renewable energy Battery storage Demand response software Fossil fuel phase-out Next-generation nuclear energy 	<ul style="list-style-type: none"> Country-wide electrification and emissions plans Investments in grid and interconnections Market reform and pricing (including carbon price) to encourage demand-led flexibility and decentralisation Support for a 'just transition' Air quality and emissions standards



Other environmental considerations

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

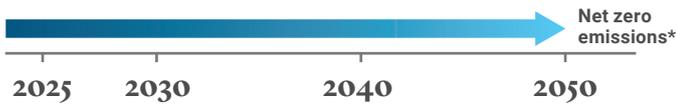
Social impacts and the 'just transition'

- 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?

Net-zero commitment	<ul style="list-style-type: none"> Does the company have comprehensive targets to meet net-zero by 2050 or earlier, and have these targets been certified by the SBTi? Has the company disclosed a net-zero transition plan, including interim targets?
Strategy	<ul style="list-style-type: none"> Are capex decisions analysed according to a well-below 2°C trajectory? And what percentage of capex is allocated to low carbon tech? Evidence of R&D in / acquisitions of low-carbon technology? Is executive remuneration aligned with a net zero pathway?
Resilience	<ul style="list-style-type: none"> Exposure to physical risk? Resilience of business model in – and alignment to – climate scenarios?
Targets	<ul style="list-style-type: none"> Does the company have targets to reduce other (non-carbon) pollutants? If no net-zero target, what GHG emissions reduction targets does the company have in place?
Collaboration	<ul style="list-style-type: none"> Evidence of the company working collaboratively across its value chain to reduce emissions? Evidence of the company advocating for meaningful policy action?
Red lines	<ul style="list-style-type: none"> Plan for phasing out coal

For more information...

Please see: 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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