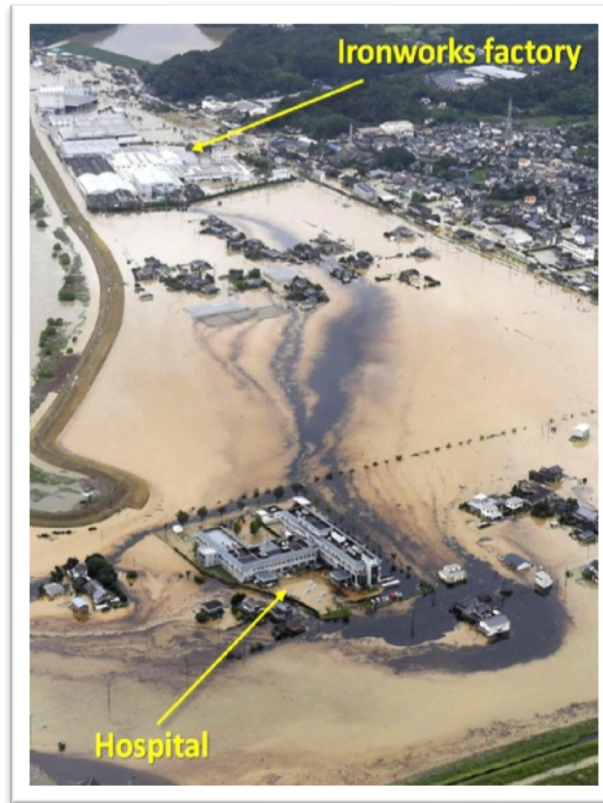
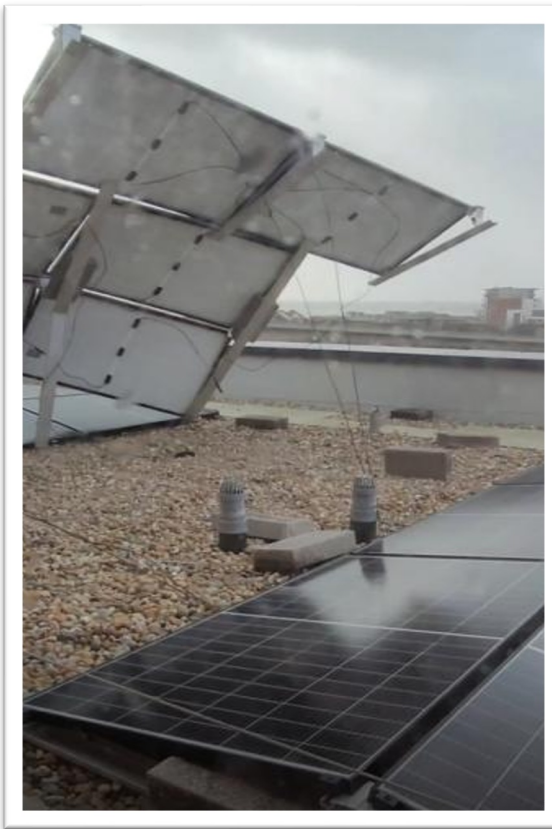


Enabling a Resilient Net Zero Transition: The Role of Regulation

Mark Ellis-Jones
Climate Change & Energy Manager

Westminster Energy Forum
28th September 2023

Extreme weather is increasingly impacting energy and energy-intensive infrastructure

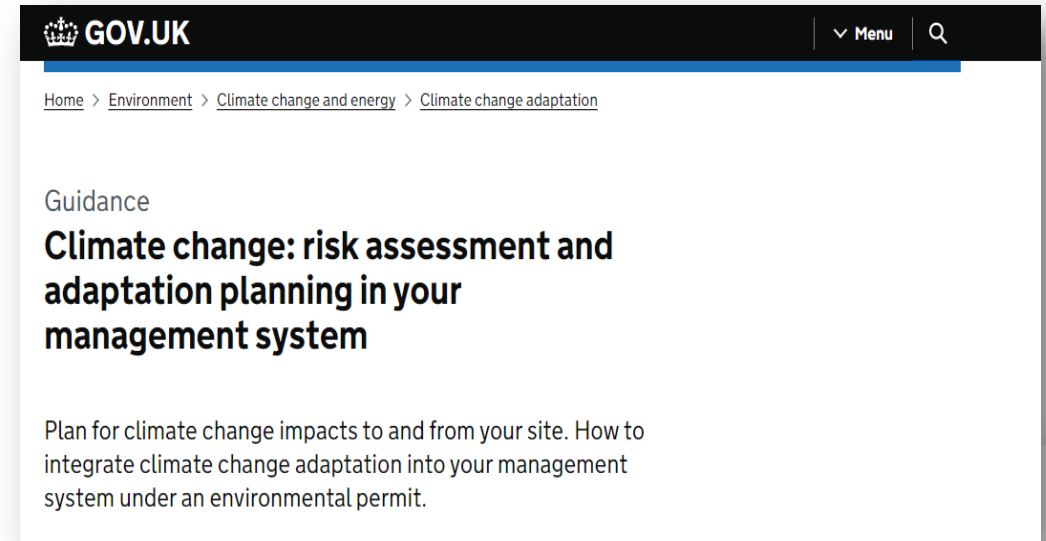


Resilience through Regulation

- Many energy or energy-intensive sites will already hold environmental permits
- We have introduced new management system requirements.
 - All new permit applications are required to incorporate climate change adaptation
 - Permits issued before April 2023 must include adaptation risk assessments by April 2024

EA expects operators will:

- ✓ Use climate impacts information, including UKCP18, to understand and manage current risks
- ✓ Assess the risks associated with a 4°C rise by 2100
- ✓ Plan to manage the risks associated with a 2°C rise by 2050
- ✓ Avoid Lock-in (e.g. during transition to Net Zero and exploring more scenarios as necessary)



The screenshot shows a GOV.UK webpage. At the top, there is a navigation bar with the GOV.UK logo, a 'Menu' dropdown, and a search icon. Below the navigation bar, there is a breadcrumb trail: 'Home > Environment > Climate change and energy > Climate change adaptation'. The main content area is titled 'Guidance' and features the heading 'Climate change: risk assessment and adaptation planning in your management system'. Below the heading, there is a short introductory paragraph: 'Plan for climate change impacts to and from your site. How to integrate climate change adaptation into your management system under an environmental permit.'

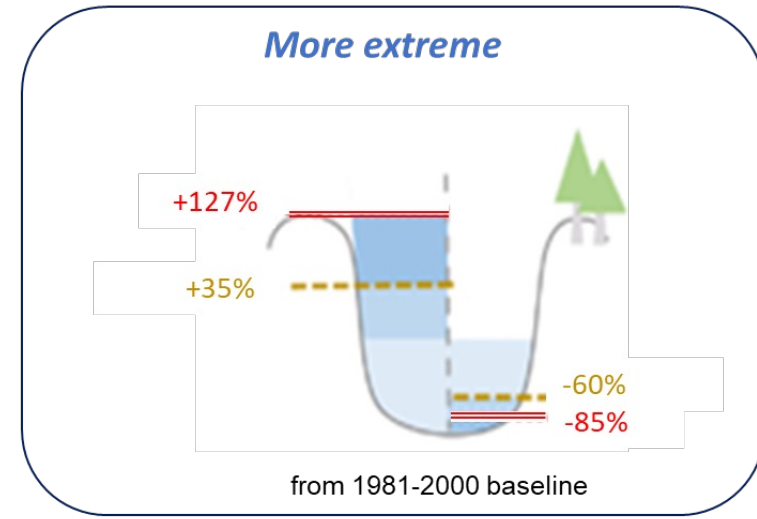
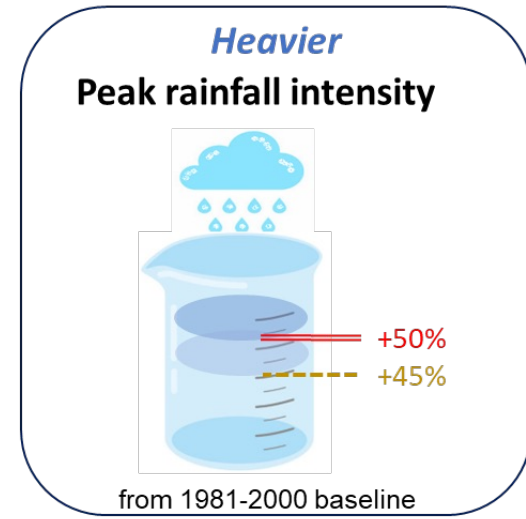
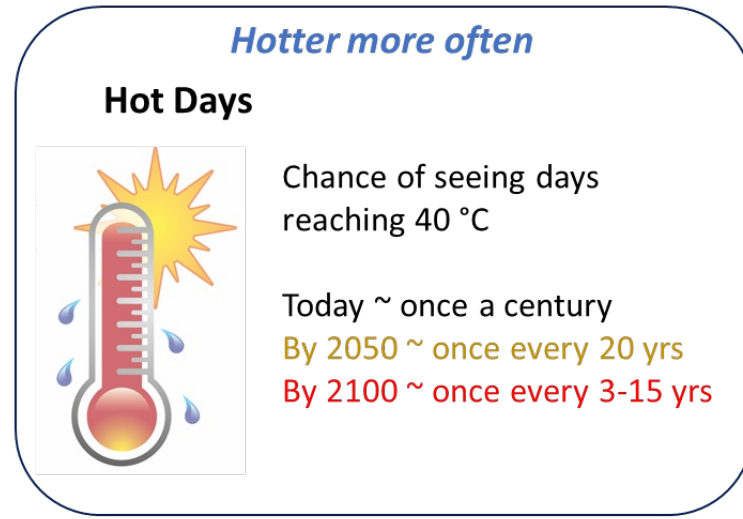
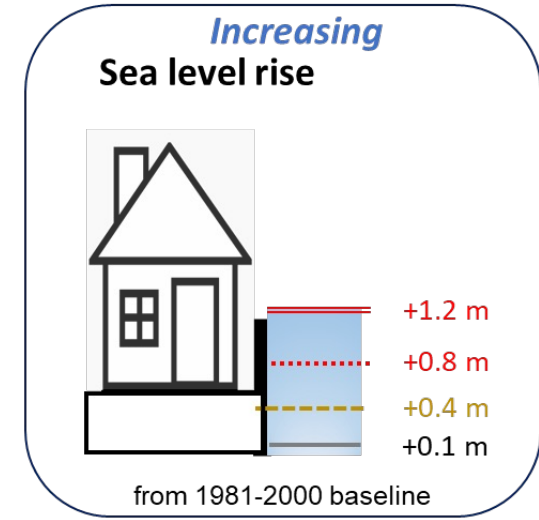
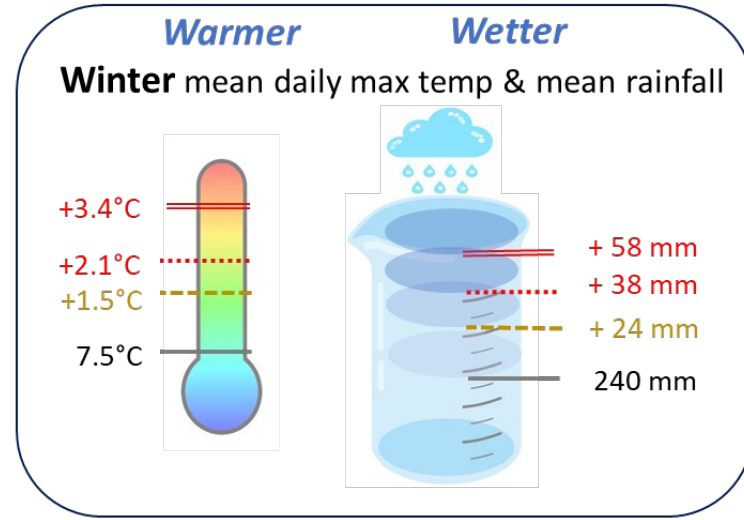
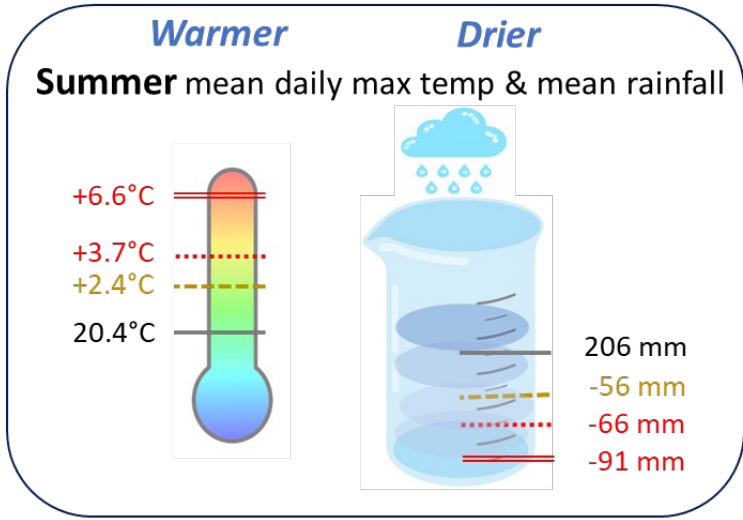


The thumbnail is a blue rectangular box with white text. It is titled 'Guidance' and features the main heading 'Combustion power: examples for your adapting to climate change risk assessment'. Below the heading, it says 'Updated 17 May 2023'.

England's climate change impacts

—— Present day
 - - - - - Mid century (+2°C on a pathway to +4°C)
 = = = = = Runaway change (+4°C by 2100)

..... Managed transition (+2°C by 2100)



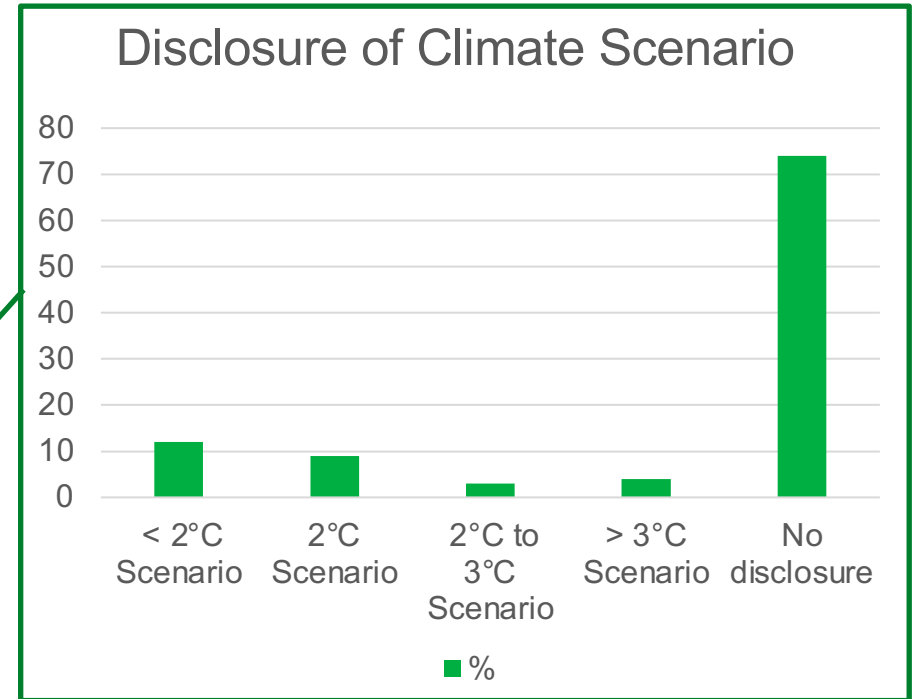
TCFD disclosure has had limited results

Average Percentage of Disclosure by Industry

Industry	Percent
Energy	43%
Materials and Buildings	42%
Banking	
Insurance	
Ag., Food, and Consumer Goods	
Transportation	
Technology	

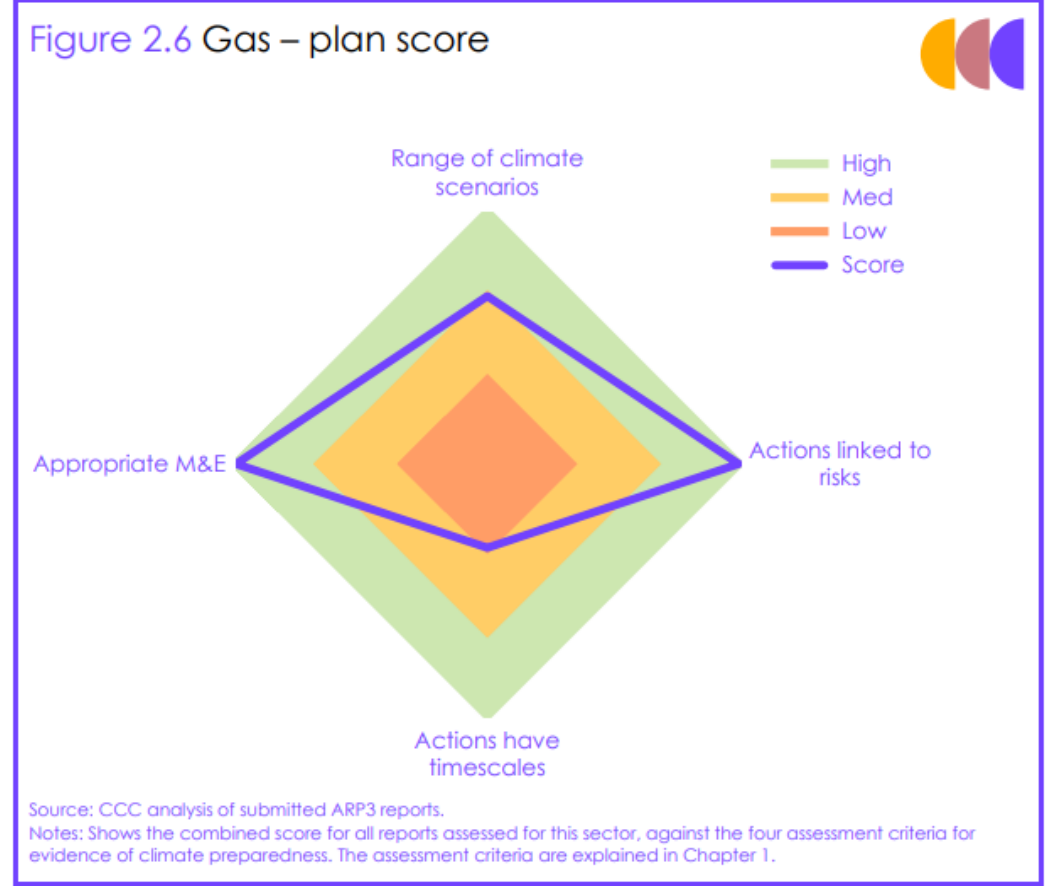
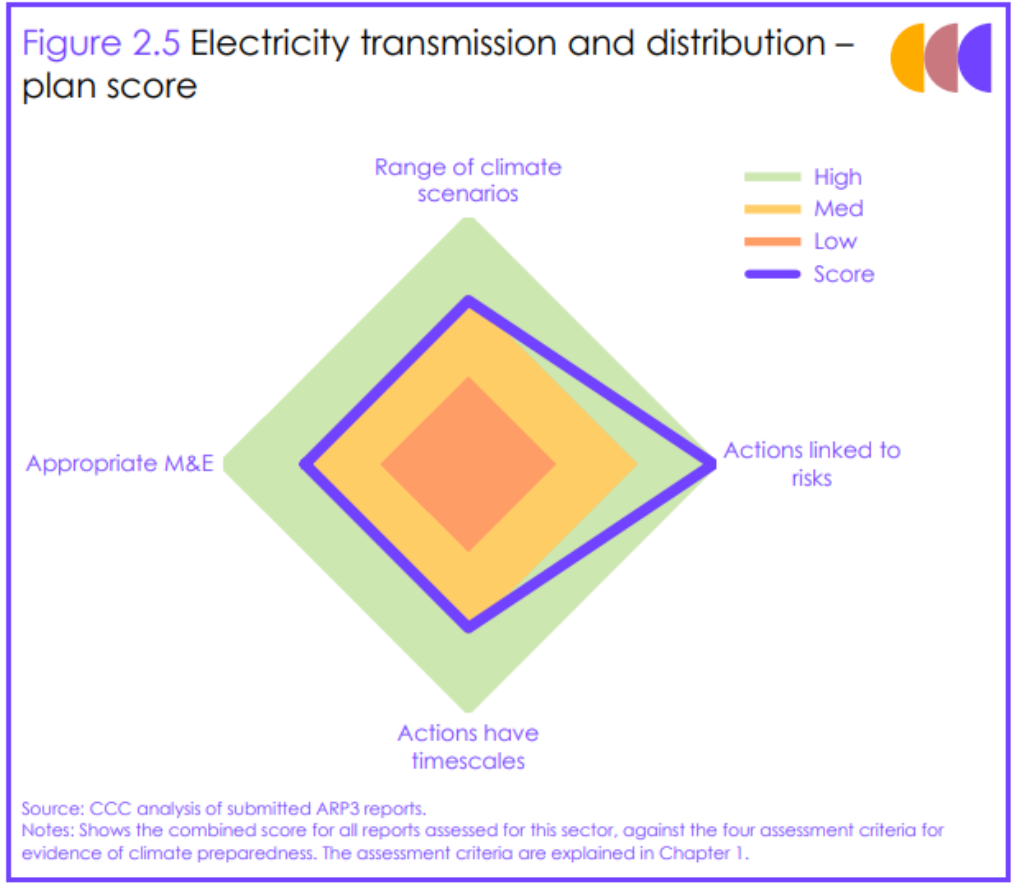
Disclosure by Industry: 2021 Fiscal Year Reporting

Recommendation	Recommended Disclosure	Banking (248) ¹	Insurance (118)	Energy (223)	Materials & Buildings (853)
Governance	a) Board Oversight	33%	36%	40%	32%
	b) Management's Role	28%	31%	21%	21%
Strategy	a) Risks and Opportunities	64%	58%	73%	67%
	b) Impact on Organization	54%	46%	54%	51%
	c) Resilience of Strategy	19%	25%	18%	16%
Risk Management	a) Risk ID and Assessment Processes	47%	45%	37%	31%
	b) Risk Management Processes	47%	49%	36%	31%
	c) Integration into Overall Risk Management	49%	52%	42%	36%
Metrics and Targets	a) Climate-Related Metrics	42%	38%	51%	58%
	b) Scope 1, 2, 3 GHG Emissions	35%	33%	48%	58%
	c) Climate-Related Targets	32%	33%	56%	57%



Only 7% of all companies have disclosed the use of a climate scenarios above 2°C

Energy sector adaptation reports (ARP3)



More than half of the reports have assessed risks in the context of scenarios consistent with a 4° C global warming level (by 2100, above preindustrial levels) and to the 2050s. More than half of the reports have also assessed risks to 2080s or beyond.

More than half of the reports have assessed risks in the context of a high emissions scenario (consistent with a 4° C global warming level by 2100, above preindustrial levels). Risks are mostly assessed out to 2050s.

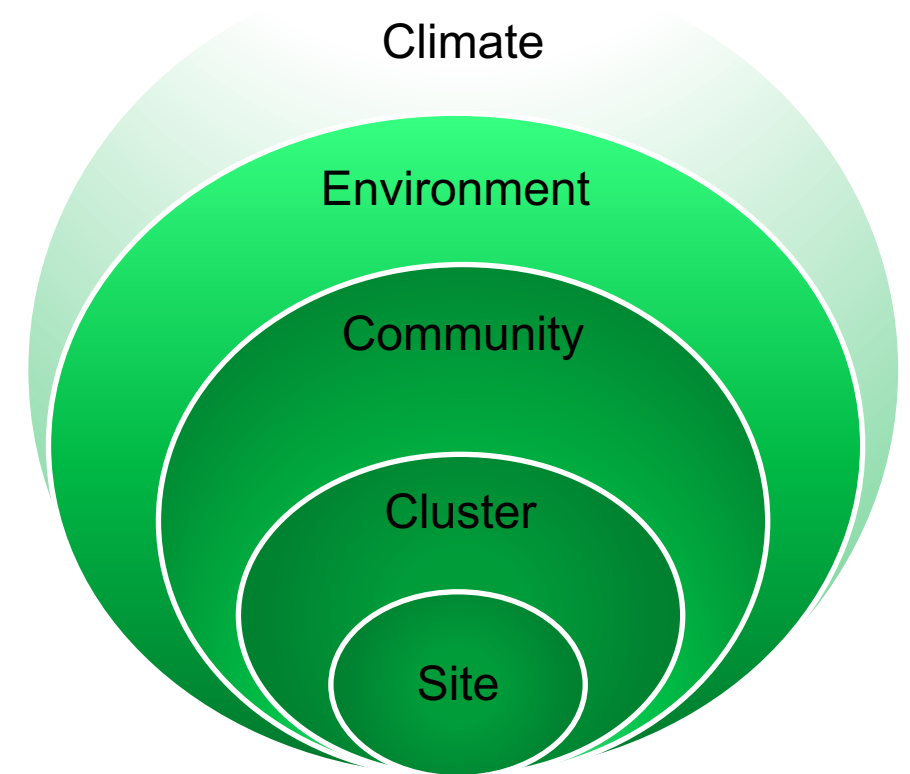




- **The Humber and Tees environment is already under pressure and the changing climate is making this worse.** Existing habitat protection designations, water quality and availability concerns are already challenging environmental permit provision in some locations. Currently water availability is the key challenge in Humber, whereas in Tees the key challenge is currently water quality.
- **Industry must engage and collaborate early at a cluster-scale to understand the environment in which they will operate and find innovative solutions.** This will avoid delays to deployment and include reducing the demand for water, addressing residual emissions that may impact the environment, to ensure net zero growth is sustainable growth.
- **Hydrogen and carbon capture technology have the potential to impact the environment potentially leading to delays in authorisation and deployment.** Water availability, water quality, air quality and flood risk are likely to challenge the deployment of hydrogen and CCUS technology in specific industrial clusters.

Systems: Clusters delivering wider benefits

- Clusters need to think beyond the project and the pipelines
- System thinking is required to consider the complex local, spatial and economic opportunities
- Collaboration at cluster-scale needed to deliver
 - Circularity within the cluster
 - Symbiosis across the cluster and with other sectors
 - Wider system benefits to nature, people and the local economy



Take aways

- Extreme weather is already affecting energy infrastructure, and the changing climate will increase the severity and frequency of impacts.
- Companies need to plan for the full range of climate impacts (2 and 4 degrees), and how these will impact their sites, their businesses and their supply chains.
- Innovation in place - within 'industrial clusters', or taking a broader systems approach - will help industry work together to find solutions to local environmental issues.