

A Well-Adapted Net Zero Energy System:

Ensuring resilience future-proofs growth and investment.

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November 2025.

Progress adapting the UK’s energy system

Committee on Climate Change, Progress Report, April 2025

- **Vulnerability of assets:** some progress has been made (e.g. guidance and standards for floods) but more work needed on other hazards (e.g. heatwaves, drought, storms). Ofgem’s guidance for the next price control period requires climate resilience in business plans.
- **Climate-resilient supply:** limited progress on supply side issues, with no requirement on energy generators to consider adaptation. They have also been exempted from government reporting requirements (ARP).
- **Interdependencies:** insufficient planning and a lack of co-ordination between sectors (e.g water and IT)

Thematic area	Outcome	Delivery and implementation	Policies and plans
Energy	Reduced vulnerability of energy assets to extreme weather.	Limited	Partial
	Climate-resilient supply.	Limited	Limited
	Interdependencies identified and managed.	Partial	Insufficient

Resilience in the Net Zero Energy System

A report by the Energy Research Partnership and Energy Systems Catapult, December 2024

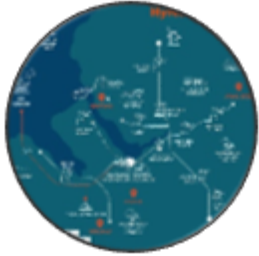
<https://es.catapult.org.uk/report/resilience-in-our-net-zero-energy-system/>

- **Strengthen Co-operation** and data sharing between critical national infrastructure providers (e.g. water and energy sectors) to ensure that interdependencies and whole system resilience is built into sector planning.
- **Strengthen understanding** of our global supply chains in the energy sector (e.g. parts, critical minerals) and the extent to which climate impacts might disrupt international trade.
- **Improve adaptation planning** for the energy sector, at both national and regional levels (NESO) and by individual companies.



Environmental Capacity for Industrial Clusters

<https://www.gov.uk/government/collections/environmental-capacity-for-industrial-clusters>



Spatial Planning

- Integrate clusters into planning reforms
- Use forthcoming Spatial Development Strategies
- Develop credible cluster growth forecasts



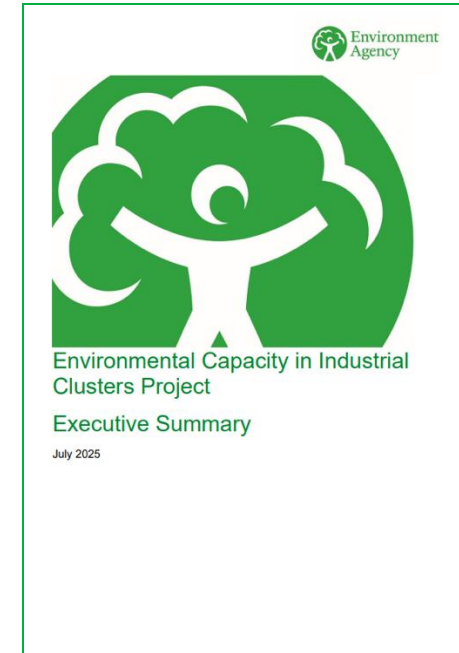
Environmental Permitting

- Consider new approaches to permitting
- Review existing permits within clusters



Climate Impacts

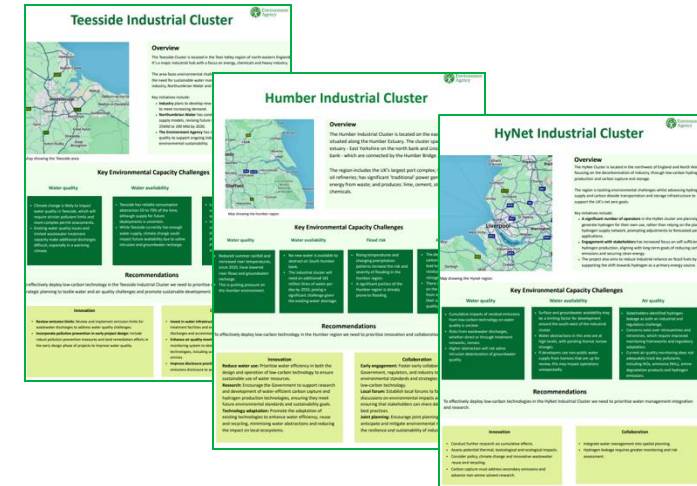
- Design infrastructure to be climate resilient
- Understand cluster interdependencies
- Agree cluster-scale scenario planning



Technical Reports for each industrial cluster:

- Water Availability
- Water Quality
- Air Quality
- Climate Impacts

- Humber cluster
- Hynet cluster
- Teesside cluster



Conclusions

- The energy sector has not done enough to adapt to future climate impacts. This poses significant risks to the resilience of the net zero energy system.
- The intersection of climate impacts and environmental pressures (e.g. water supply) will further compound risks. The interdependencies between sectors needs to be better co-ordinated.
- Opportunities exist to improve resilience planning –
 - NESO energy planning (SSEP, RSEPs)
 - Reforms to land-use planning (SDSs)
 - Modernising regulation and permitting
- Acting now will ensure net zero investment is future-proofed, whilst unlocking potential for growth and sustainability.

