

Green paper summary for the IET Sustainability & Net Zero Policy Centre - Hydrogen for a Net Zero UK: Building a Secure, Scalable and Resilient Hydrogen Economy

Executive Summary

Hydrogen is not a universal fuel but can be a critical enabler of industrial decarbonisation and system flexibility. Thermal energy above 400°C, chemical materials, long-haul transport, and long-duration energy storage are hydrogen's "win zones".

The UK has strong starting assets, yet deployment is slow and costlier than necessary because five foundations are not advancing in unison: infrastructure, manufacturing, workforce capability, market design, and regulation and safety assurance.

The UK has a narrow window to become a global hydrogen leader. Without action on storage, skills and planning reform, investment, jobs and industrial growth will go elsewhere.

Three priorities for government:

1. Unlock hydrogen storage investment
2. Reform planning and consenting processes
3. Build the skills workforce needed for deployment

Why MPs should care:

1. Supports industrial jobs, and economic growth, and addresses skills shortages
2. Strengthens UK energy security and resilience
3. Helps decarbonisation hard-to-abate sectors
4. Creates export opportunities in engineering and safety expertise
5. Brings investment to industrial regions and clusters across the UK

The significance for the sector and the UK

With coordinated action, the UK can convert ambition into operation. A structured approach to hydrogen can help to deliver clusters at scale, and position the UK as an exemplar in standards, engineering, and safety expertise.

Implementation Roadmap (2025 to 2030)

1. 2025 to 2026: Foundations

Cluster deals launched with storage plans, Manufacturing Taskforce established, Skills Academy created, standardised offtake templates published, and single front door consenting piloted.

2. 2027 to 2028: Scaling

First cavern investment decisions, vendor accreditation, adoption of hydrogen-specific risk-based inspections, and early hydrogen to power and long-duration energy storage integration.

3. 2029 to 2030: System Integration

Operational cluster storage, dispatchable hydrogen to power capacity, strong safety records, and a developing export capability in standards, quality assurance, and high-value components.

Policy Recommendations

1. Regional cluster deals with early storage

Government should establish hydrogen cluster deals with integrated storage infrastructure.

2. Finance and market design

Government should streamline planning and consenting through a single hydrogen pathway.

3. UK hydrogen equipment manufacturing taskforce

Government should establish a UK Hydrogen Manufacturing Taskforce.

4. National hydrogen skills academy

Government should establish a National Hydrogen Skills Academy.

5. Consenting reform

Government should establish a consenting pathway with managers, milestones, and documentation.

6. Hydrogen specific safety and standards

Government should champion hydrogen-specific risk-based inspections, and materials integrity requirements.

7. System integration

Government should treat hydrogen production and storage as part of the wider flexibility stack and coordinate with NESO's planning outputs.

Source: [Green paper for the IET Sustainability and Net Zero Policy Centre](#)

What we are asking of Parliament

- Support accelerated hydrogen storage deployment
- Back planning reform for strategic energy infrastructure
- Champion investment in hydrogen skills and manufacturing capability

For further information, please contact policy@theiet.org