



POST SHOW REPORT

Energy Landscape UK 2025 Conference & Exhibition

"Empowering the UK's Energy Future: Collaboration, Innovation, and Skills for Net-Zero Success"



15-16

Oct 2025

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Thank You

from the Managing Directors

Dear Esteemed Participants, Sponsors, and Stakeholders,

On behalf of the entire **Energise Landscape Ltd** team, thank you for making **Energy Landscape UK (ELUK2025) Conference & Exhibition** an extraordinary success. Over two days, you brought clarity, candour, and momentum to the UK's most urgent challenge: delivering a secure, affordable, and decarbonised energy system that works for people, industry, and place.

This year's conversations were honest and action-oriented. Together, we confronted the hard economics of affordability, unlocked pathways to accelerate grid and planning reform, explored how CCUS and hydrogen can anchor a just industrial transition, reaffirmed nuclear's role in reliable baseload, and embraced the consumer-centric integration of heat, power, transport and data. We also looked beyond 2050—at fusion, space-based solar, and advanced materials—while keeping our focus firmly on delivery, skills, and public confidence today.

What ELUK2025 reinforced

- **Affordability first:** Clean energy must become cheaper, not just cleaner.
- **Delivery over dialogue:** Grid, storage, and planning reform are now mission-critical.
- A just transition: Industrial clusters, skills pipelines, and regional regeneration must move in lockstep.
- **Digital** + **energy convergence:** Data centres and AI are part of the energy system—and part of the solution.
- **Innovation with purpose:** Frontier technologies will future-proof UK leadership if we stay the course.

None of this would have been possible without our **sponsors**, **exhibitors**, **speakers**, **moderators**, **advisory committee**, **supporters**, **and delegates**. Your trust and partnership turn ambition into action. Thank you.



Andrew
Beales
Managing Director



Rekha
Kaur
Managing Director

Looking ahead: 2026 will be even bigger

In 2026 we are expanding from a conference into a **national confex for energy and the built environment**, bringing the energy transition and housing decarbonisation under one roof.

UK Energy + Housing Landscape 2026 will feature:

- 2,500+ visitors
- 75+ exhibitors
- 500+ delegates
- 150+ speakers
- 20+ panels across energy, housing, and infrastructure integration
- 20+ innovation showcases spotlighting deployable solutions

This enlarged platform will connect energy, housing, and place-making—because net zero only works when **systems** work together: homes, grids, industry, mobility, data, and skills.

Thank you once again for your commitment, your expertise, and your belief that the UK can finish what it started. We look forward to building on this year's momentum and welcoming you to an expanded 2026 edition that unites **energy and housing** to deliver a just, investable, and consumer-centric net zero future.

With gratitude and determination,

Rekha Kaur & Andrew Beales Managing Directors, Energise Landscape Ltd



"EMPOWERING THE UK'S ENERGY FUTURE: COLLABORATION, INNOVATION, SKILLS FOR NET ZERO SUCCESS"

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Westwood Global Energy Group | Par

















































































Luke Sperrin
Digital Catapult |















Sarah Honan ADE: Demand | Panel







Dr Elina Militello Asp UKAEA | Panel 12 MODERATOR

Itxaso Ariza Tokamak Energy | Panel 12





EVENT HIGHLIGHTS

ELUK 2025 Participants

288 ATTENDEES

70 EXPERT PANELISTS

22 SPONSORS & PARTNERS

428,483

WEBSITE VISITORS & LINKEDIN IMPRESSIONS

COMPANIES REPRESENTED

A1 Zero Carbon, Access Information Advisory, ADE: Demand, Adelan and UK Hydrogen Champion for Mission Innovation, AECOM, AFC Energy plc, AI Energy Think Tank, Arup, Atriarc Group, AXIS, Bellrock Group, Beyond2050, BiHcon, Black Country Industrial Cluster, Bloomberg, British Hydropower Association (BHA), Burges Salmon, Carbon & Energy Fund, Carbon Capture & Storage Association, Carpmaels and Ransford, CBRE, Correla Ltd, Cumbria University, Decarbonisation Consulting Ltd, Decision Analysis Services (DAS), Department for Energy Security & Net Zero, DESNZ, Developing Experts, Digital Catapult, Dowds Group, E.ON, E.ON UK, EA Technology Ltd, ecoaim, Ecotricity, Ecotricity & Green Britain Group, Ecotricity Business, Eden Futures, EdenLab, EET Hydrogen, Electrify Britain, ENA, Energise Landscape, Energy and Utilities Alliance (EUA), Energy Coast UTC, ENGIE UK, Engineers Without Borders UK, Enphase Energy, ERM, eviFile, ExxonMobil, F&H Power Consultants Ltd, FiRe Energy, First Light Fusion, Frontier Industries, Fusion Industry Association, Future Biogas, GE Hitachi Nuclear Energy International - UK, Great British Energy, GRIDSERVE, Hawthorn Advisors, House of Commons, Howden, Howden Capital, Advisory & Placement, Howden Group, Hydrogen Energy Association, Infinis, ITS Technology Group, Jera Nex BP, JOGMEC, Joulen, Kent, Kerry London, KPMG, KPMG LLP, KPMG UK, LCP Delta, LRQA, Max Logic, Microsoft, Ministry of Trade & Investment Nigeria, Moorhouse Consulting, National Energy Systems Operator (NESO), National Grid, National Grid Electricity Distribution, Navigator Terminals Ltd, Net Zero Industry Wales, Net Zero North West, Network Rail, Newcleo, Nobel Upstream, NucCol, Nuclear Collaboration Ltd (NucCol), Octopus Energy, Ofgem, PA Consulting, Palace Yard, Progressive Energy Ltd, Radiant, Radiant Energy & Education, RBC Capital Markets, REA, Red Engine, Reform UK, Rystad Energy, Shell, Siemens Gamesa, Silverwood Property, Sizewell C, Société Générale, Solarport Systems, Sonnedix, Space Solar, Statkraft, Stimwell Services, Taylor Woodrow, Tees Valley Combined Authority, The Carbon and Energy Fund (CEF), The Carbon Trust, The Crown Estate, The SCP Ltd, TipplyAI, Tokamak Energy, UAP | Atmosphere Engineering, UK Atomic Energy Authority, UK Civil Aviation Authority, UKAEA, UKNNL, United Kingdom National Nuclear Laboratory, Upstream Online, V360XR, ViRenewables, VPI, VPI's Humber Zero, Wass Associates, Westwood Global Energy Group, Women in Nuclear UK (WiN UK), Xlinks, Xoserve.

CONFERENCE OVERVIEW DAY 1 & 2

Introduction

The Energy Landscape UK (ELUK2025) Conference & Exhibition convened just under 300 senior leaders and experts from across government, industry, academia, and civil society to address one defining question:

How can the UK accelerate its journey toward net zero while ensuring energy security, affordability, and industrial competitiveness?

Across two intensive days, the conference featured 12 high-level panels, strategic keynotes, and collaborative discussions, providing an honest assessment of the nation's progress — and what must change to deliver a fair, fast, and credible energy transition.

The result was a rare moment of candour and collaboration — a shared recognition that **the UK's energy transition has moved beyond ambition into the era of delivery**. The question is no longer *why* or *whether* to act, but *how fast and how fairly* we can get there.

Day 1 Highlights – Setting the Direction

Opening Keynote – Electrifying Britain: From Ambition to Affordability

The conference opened with a powerful keynote that reframed the challenge ahead: the UK must now focus on **affordability**, **alignment**, and action.

The address celebrated the UK's decade of clean-energy leadership but warned that high electricity prices, policy fragmentation, and public fatigue risk derailing progress. The call was clear —

make clean power cheaper, not just cleaner, and reconnect national ambition to the realities of consumers and businesses.

"The future will not be defined by how much power we generate, but by how affordably people can use it."

Panel 1 – The UK's Role in Global Net-Zero Leadership

The first panel examined whether the UK can sustain its global influence amid rising competition and economic strain.

The consensus: leadership depends on policy stability, cross-party collaboration, and visible domestic delivery.

Industry urged renewed focus on communication — showing citizens how the transition improves everyday life through jobs, investment, and local growth.

Panel 2 – Financing the Energy Transition

Finance leaders underscored that capital is not the problem — confidence is.

The UK's regulatory sophistication remains admired globally, but **slow approvals and shifting policy signals** erode investor trust.

Simpler frameworks and faster timelines are now critical to attract long-term institutional capital.

Panel 3 – Powering the Grid of the Future

The UK's **electricity grid** was identified as both the backbone and bottleneck of decarbonisation.

Connection delays stretching into the 2030s are throttling investment.

Speakers called for:

- Streamlined planning and permitting;
- Investment in digital and flexible infrastructure;
- A mindset shift from "build more" to "use smarter."

Panel 4 – Renewable Acceleration and Energy Mix

The panel emphasised that renewables are no longer niche — they are mainstream. However, integration challenges now dominate: storage, intermittency, and transmission. The key is a **balanced portfolio** — combining offshore wind, solar, nuclear, hydrogen, and flexible backup — to ensure stability and affordability.

Panel 5 – The Role of Nuclear in a Net-Zero Energy System

Nuclear's role as reliable, low-carbon baseload was reaffirmed.

Small Modular Reactors (SMRs) and fusion innovation were hailed as game-changers, offering long-term energy independence and industrial renewal.

The sector's greatest needs are **clear financing pathways**, regulatory pace, and public engagement to rebuild trust in nuclear technology.

Panel 6 – The Future Energy Workforce

The conversation turned to **skills and inclusion**, with delegates warning that workforce shortages could become the biggest constraint to progress.

A national plan linking education, training, and regional regeneration was seen as essential.

"There is no net zero without the people to build it."

Day 2 Highlights - From Industrial Decarbonisation to Frontier Energy

Panel 7 – Decarbonising UK Industrial Clusters

Day 2 began with a deep dive into CCUS and hydrogen integration across industrial heartlands.

The message: CCUS is not optional — it's essential.

Delegates warned that delays risk losing both investor confidence and regional jobs.

Key priorities included:

- Accelerate cluster funding and approvals.
- Support inland regions beyond coastal hubs.
- Align skills, supply chains, and infrastructure for a *just transition*.

Panel 8 – Hydrogen: Powering the UK's Path to Net Zero

Hydrogen emerged as both a decarbonisation tool and industrial strategy. Blue hydrogen provides immediate scale; green hydrogen will follow as costs fall. Panelists also showcased ammonia cracking, digital innovation, and supply-chain integration as enablers of mass adoption.

The consensus:

Hydrogen is the **glue** connecting energy security, industrial competitiveness, and clean growth.

Panel 9 – Oil & Gas: Balancing Legacy and Transition

A candid discussion explored the realities of the transition.

Oil and gas remain vital for energy security, but must decarbonise rapidly through CCUS, methane capture, and efficiency.

Delegates urged policymakers to stabilise fiscal regimes and prioritise the "just transition" to protect communities and retain workforce expertise.

"This is not about ending hydrocarbons — it's about ending emissions."

Panel 10 – Integrating Energy Systems

The debate shifted to **system integration** — the digital and behavioural revolution underpinning the future grid.

[&]quot;We can't create 50,000 new jobs if 75,000 existing ones are lost."

The next phase of the transition will be **consumer-centric**: smart tariffs, automation, and data-driven flexibility.

Participants called for regulation that reflects today's assets — not yesterday's architecture.

Panel 11 – Data Centers & AI: Powering the Digital Economy

AI and digital infrastructure are driving a new wave of energy demand.

Data centers, once peripheral, are now **strategic assets** — both major consumers and potential grid participants.

The UK must integrate **clean power with digital infrastructure**, reform planning, and invest in on-site generation to maintain global competitiveness.

Panel 12 – Future Energy Sources: Fusion, Space Solar, and Beyond

The closing session looked beyond net zero to the **next frontier of clean energy**.

Fusion, space-based solar power, and advanced materials were presented as transformational opportunities to deliver **limitless**, **carbon-free energy**.

Delegates called for sustained investment, skills pipelines, and public-private collaboration to keep the UK at the forefront of global innovation.

"We can't afford to bet small — the real risk is failing to back the future at all."

Key Takeaways from ELUK2025

1. Affordability is now the frontline.

The success of net zero depends on making clean energy cheaper, not just cleaner.

2. Delivery must replace ambition.

The UK has the vision — what's missing is speed, coordination, and follow-through.

3. Infrastructure is destiny.

Grid, storage, and planning reform will define the next decade's success.

4. Skills are the transition's currency.

Without a national workforce strategy, the energy transition cannot scale.

5. Public consent is earned, not assumed.

People need to see and feel the benefits of the transition in lower bills and better jobs.

6. Digitalisation is the great enabler.

AI, data, and automation are redefining how energy is produced, distributed, and consumed.

7. Integration and inclusion are key.

The energy transition must work *for everyone* — across sectors, regions, and demographics.

8. Innovation is the insurance policy.

Fusion, hydrogen, and space solar technologies represent the UK's opportunity to lead globally again.

Insights & Impacts

- **Economic Impact:** The UK's energy transition is a trillion-pound opportunity but only if investor confidence is rebuilt through stable policy and faster decision-making.
- **Regional Regeneration:** Industrial clusters, hydrogen hubs, and nuclear sites can anchor levelling-up agendas, creating *tens of thousands of skilled jobs*.
- **Technological Convergence:** Energy, AI, and digital infrastructure are merging into a single ecosystem offering new business models and efficiency gains.
- **Social Impact:** Public trust and affordability will decide the transition's political legitimacy. Net zero must *improve lives*, not impose costs.
- **Global Positioning:** The UK remains a thought leader but risks losing ground to faster-moving nations. Delivery must now match its ambition.

Next Steps & Recommendations

1. Strengthen Delivery Governance

Establish a **cross-departmental Energy Transition Delivery Taskforce** to track real-time progress across energy, skills, and infrastructure — ensuring accountability beyond electoral cycles.

2. Rebalance Energy Costs

Reform electricity pricing and policy levies to align economic incentives with decarbonisation, ensuring clean power is the *affordable choice* for consumers and industry.

3. Accelerate Grid and Planning Reform

Fast-track critical infrastructure through **Nationally Significant Energy Projects (NSEP)** designation, with a "one-stop" planning window to reduce delays.

4. Scale Skills and Diversity Programmes

Partner with industry, universities, and technical colleges to deliver a **national clean-energy** skills framework, ensuring inclusivity and regional participation.

5. Expand CCUS and Hydrogen Clusters

Move beyond demonstration — commit to **full-scale deployment** by the late 2020s, linking inland manufacturers to coastal storage via shared transport networks.

6. Integrate Digital and Energy Policy

Align Ofgem, DSIT, and DESNZ strategies to ensure data infrastructure growth is matched with clean, reliable energy supply.

7. Sustain Frontier Innovation

Maintain long-term R&D funding for **fusion**, **small modular reactors**, **and space-based solar power**, ensuring UK leadership in post-2050 energy markets.

8. Continue National Dialogue

Launch an **annual progress forum** to review achievements, challenges, and cross-sector alignment — tracking where the UK stands on its net-zero journey.

Recommendation:

ELUK should continue to serve as the neutral, independent platform to review progress annually, benchmark delivery, and drive open, evidence-based discussion on *where we are — and where we must go next*.

Conclusion

ELUK2025 confirmed that the UK's pathway to net zero is not a question of technology or intent, but of **execution**, **equity**, **and endurance**.

The conference ended on a note of determined optimism:

Britain has the capability, creativity, and conviction to deliver a just and competitive cleanenergy future — but it must now act with pace, partnership, and purpose.

"The era of ambition is over. The era of delivery has begun — and the world is watching how the UK leads."

ELUK2025 **Keynote Address**



ELUK2025 Opening Keynote Address by Ben Westerman: Electrifying Britain — From Ambition to Affordability

Session Overview

The opening keynote at *Energy Landscape UK (ELUK2025)* set an electrifying tone for the conference, calling for **renewed courage**, **coherence**, **and honesty** in the UK's energy transition.

The speaker celebrated two decades of unprecedented progress — from the transformation of offshore wind into an industrial success story to record-breaking emissions reductions and world-leading innovation in renewables. Yet, the central message was unflinching:

"The age of ambition has passed — the age of affordability and delivery has begun."

The keynote framed the UK's next energy chapter not as a technical challenge, but as a **political** and economic one — a test of whether the nation can realign markets, policies, and public trust to power a truly electrified, consumer-driven economy.

1. The Legacy of Leadership — A Decade of Boldness

The UK's renewable revolution was described as one of the great industrial success stories of the 21st century. Over the past decade, the UK has:

- Built one of the fastest-growing renewable energy sectors in the world.
- Cut power sector emissions faster than any major economy.
- Turned offshore wind from a subsidised experiment into a globally competitive industry.
- Proven that climate leadership and competitiveness can reinforce each other.

This success, the keynote emphasised, was driven by **boldness and alignment** — when government, regulators, and private capital shared a common vision and moved in sync. It was a period of "national imagination," where risk-taking and political conviction delivered measurable transformation.

However, this phase — one of rapid deployment and abundant capital — is over. The next phase demands a different kind of leadership.

"We proved that when the UK gets serious, it can deliver transformation at pace. But that era of easy alignment is over. The next one will be much harder."

2. A New Reality — Misalignment and Stagnation

Today's challenge, the keynote argued, lies not in ambition but in **alignment**. The forces that once worked harmoniously — **policy, politics, and capital** — are now pulling in different directions:

- Capital seeks **certainty** and **stable regulation**.
- Government seeks **fiscal restraint** but demands fast results.
- Consumers want **lower bills today**, not promises of savings tomorrow.

This misalignment has created a "fault line" in the energy transition, with **electricity costs** emerging as its most visible symptom.

"As long as clean electricity remains more expensive than fossil fuels, we will never unlock the scale of electrification Britain needs."

Electricity costs now shape everything — from industrial competitiveness and investment confidence to public consent. Fixing this, the keynote warned, is not a technical issue but a **political economy challenge**.

3. The Cost of Electricity — The Core Crisis

The high cost of electricity was described as **the single greatest barrier** to progress. While the UK's clean energy supply is world-class, its affordability remains weak. Policy levies, legacy charges, and market structures continue to **load costs onto electricity while gas remains under-taxed**.

- Policy costs make up around 16% of electricity bills, compared to 6% of gas bills.
- Gas continues to set the wholesale price most of the time.
- As a result, households and businesses face structurally higher costs for clean energy adoption.

The impact is profound:

- **Households** hesitate to switch to heat pumps or EVs.
- SMEs delay electrification investments.
- Industrial operators reconsider UK competitiveness.

The keynote's warning was blunt:

"We're taxing clean power and subsidising fossil use — and wondering why electrification looks expensive. That's not market failure. That's politics."

4. Rebalancing the System — From Supply to Demand

The UK's energy system, the keynote argued, has been built on a **supply-side mindset**. It measures success in **megawatts built, not megawatts used**, focusing on generation rather than consumption. This model, once necessary to build capacity, is now outdated.

The next frontier must be **demand electrification** — making clean energy use affordable and intuitive across homes, businesses, and industries.

- **Demand should be treated as infrastructure** financed, planned, and rewarded like generation.
- Cheap, green energy should be accessible when abundant, not curtailed.
- Smart pricing and digital systems must match consumption to supply, empowering consumers to benefit when wind or solar output peaks.

"The transition won't succeed because we build more kit — it will succeed when people can afford to use clean electricity."

The vision is of an **intelligent**, **flexible system** where consumers experience affordability through automation and efficiency — not abstraction or messaging.

5. Affordability — The True Test of Public Consent

The keynote warned that **public consent for net zero is at risk**.

Energy is no longer perceived as an environmental issue — it's an economic one, a "monthly reminder of financial pressure."

Polling data shows that even households earning close to £90,000 a year remain concerned about energy bills — evidence that the transition is not delivering tangible benefits.

The call to action:

- **Reform energy pricing** to remove unfair cost burdens from electricity.
- Simplify and rebalance policy levies to ensure consumers are not penalised for doing the right thing.

• **Deliver visible results** — lower bills, warmer homes, and cheaper clean transport — to rebuild public trust.

"We don't need better messaging. We need better economics."

6. Honest Conversations — The Courage to Confront Trade-Offs

The keynote challenged the sector to replace complacency with candour. It called for political honesty about the **costs**, **trade-offs**, **and limits** of current strategies:

- Some subsidies may need to be reconsidered or phased out.
- Regulators must focus on performance, not guaranteed profits.
- The UK must admit where technologies such as hydrogen for home heating offer limited value.
- Offshore wind, while vital, must be acknowledged as expensive until costs stabilise.

This honesty is critical not only for public transparency but also for **market credibility**. Investors and consumers alike need clarity, not idealism.

"The next decade isn't about capacity — it's about capability. Creating a system that can flex, absorb, and deliver at scale. That requires courage — and honesty."

7. Political Economy and Market Reform

To secure long-term energy security and affordability, the UK must rebalance **how energy** markets work:

- Stop pricing clean power against gas and allow renewables to set market prices.
- Reward system efficiency, not just infrastructure investment.
- Strengthen regulatory independence while curbing politicisation of decisions.
- Align financial incentives with performance, flexibility, and consumer outcomes.

This structural reform, the keynote argued, is the missing piece in achieving the UK's Clean Power 2030 ambition.

8. Electrification as an Economic Strategy

The vision presented was "Electrified Britain" — a new framework where electrification is not an abstract climate goal but a national economic strategy.

Electrification, if pursued intelligently, delivers:

• Lower bills through system efficiency and smart demand management.

- **Job creation** through industrial and technological investment.
- Energy autonomy by reducing import dependence.
- **Public trust** by linking green progress to tangible economic benefits.

By decoupling electrification from the distant rhetoric of "net zero" and reframing it as **an everyday economic opportunity**, the UK can turn climate ambition into mainstream public support.

"If we make electrification the economic mainstream, net zero stops being a political argument — it becomes a byproduct of progress."

9. From Narrative to Experience — Action Over Rhetoric

A recurring theme was the rejection of "narrative politics."

The energy transition, the keynote argued, will not be won through storytelling or branding — but through **lived experience**.

People don't want a new story; they want:

- Lower bills.
- Warmer homes.
- Cheaper, cleaner transport.
- Systems that work better, not just sound better.

"Narrative doesn't cut bills. People don't need a new story about the transition — they need a new experience of it."

10. The Decade of Delivery — Affordability, Resilience, Confidence

In closing, the keynote defined three **tests for leadership** over the coming decade:

- 1. **Affordability** Lower bills as the ultimate measure of success.
- 2. **Resilience** True energy security through diversity and independence from volatile global gas prices.
- 3. **Confidence** Restoring faith among investors, workers, and the public that the UK's energy system is fair, durable, and functional.

Failure, the keynote warned, will not come from lack of ambition but from **drift** — from complacency, incrementalism, and pilot projects that never scale.

"The biggest danger now isn't failure. It's drift. Drift into incrementalism and headlines over outcomes."

The address concluded with a challenge to every stakeholder in the room — government, regulators, and industry alike — to rediscover the boldness that defined the last decade and apply it to the defining challenges of the next: **demand, affordability, and political trust**.

"The future will not be defined by how much power we generate — but by how confidently and affordably people can use it."

Conclusion

The ELUK2025 opening keynote reframed the UK's energy transition as a test not of technology but of **coherence**, **courage**, **and credibility**.

It was both a celebration of achievement and a call to action — to move from **ambition to** alignment, and from rhetoric to results.

If the UK can make clean energy affordable, intelligent, and inclusive, it can once again lead the world — not just in innovation, but in **delivering a just, electrified, and resilient energy future**.

"Britain has proven it can start revolutions. The question now is whether it can finish them."

PANEL HIGHLIGHTS Panel 1 Overview



From Left to Right: Bill Esterson, Labour MP; Natascha Engel, Palace Yard; Trevor Hutchings, REA; Sean Matthews, Reform
UK; David Linden, Westwood Global Energy Group (Moderator)

Panel 1: Rising to the Challenge — The UK's Role in Global Net Zero Leadership

Session Overview

The opening panel of the conference explored whether the UK can maintain its global leadership position on net zero amid shifting political, economic, and public pressures. The discussion brought together voices from across the energy ecosystem, local government, and policy analysis — reflecting the diversity of views shaping the nation's transition toward a low-carbon economy.

The central question: Can the UK continue to lead on net zero while ensuring affordability, energy security, and industrial competitiveness?

1. Context and Framing

The session began by recognising that the UK was the first major economy to legislate for net zero — a historic act that once united political parties and gained global admiration. However, the consensus is now fractured, with widening divisions emerging over cost, speed, and the practical realities of implementation.

While early political unity helped propel the UK's global leadership, today's environment reflects new challenges: volatile energy prices, a fragile economy, and competing public priorities.

2. Key Themes and Insights

A. The Triple Challenge: Affordability, Security, Sustainability

All participants acknowledged the complexity of balancing the energy trilemma:

- **Affordability:** Rising energy prices dominate voter sentiment. There was broad agreement that the energy transition must directly reduce household and business bills to maintain public support.
- Energy Security: Recent crises underscored the dangers of dependency on international fossil fuel markets. Building domestic resilience through renewables, nuclear, and grid upgrades was seen as essential.
- Sustainability: While long-term decarbonisation remains critical, its immediacy and pace are now politically contested.

One view cautioned against moving "too fast" given fiscal pressures and affordability concerns. Others countered that **slowing down would increase long-term costs**, citing evidence that climate inaction could halve GDP by 2050 and escalate societal and environmental losses.

B. Economic Opportunity and Industrial Strategy

Several participants emphasised that the clean energy transition is now an economic, not just moral, imperative.

- The UK's "net zero economy" already supports close to one million jobs and is growing ten times faster than the wider economy.
- Many roles welders, engineers, installers represent a direct transfer of skills from traditional sectors such as oil, gas, and heavy industry into renewables, hydrogen, and nuclear.
- The North Sea, long a symbol of fossil fuel power, is being reimagined as a "net zero basin" with offshore wind, CCUS, hydrogen, and decommissioning industries driving new employment.

However, concerns remain over **policy volatility** and **investor confidence**. Participants warned that inconsistent messaging, changing targets, and political polarisation risk driving investment — and jobs — abroad to markets like the US, France, and Asia, where long-term commitment appears firmer.

C. The Political Narrative: Beyond "Tell" to "Show"

A critical point emerged around communication. The energy transition, once framed as a technocratic or ideological issue, must now connect to people's lived realities. Rather than "telling" the public about the benefits of net zero, **the UK must "show" tangible results** — stable bills, local job creation, and visible investment in communities.

Voters, it was argued, are fatigued by abstract climate narratives and respond more strongly to practical outcomes such as:

- Local economic revitalisation
- Skills development for their children
- Secure, affordable energy supplies

Framing net zero through the lens of opportunity — not fear — is seen as crucial for rebuilding political and public consensus.

D. The Role of Skills and Localisation

Skills were identified as **the missing bridge between ambition and delivery**. Participants stressed that:

- The transition will fail without long-term, regionally tailored skills strategies.
- There is currently **no central authority mapping which regions need which skills** to meet project pipelines.
- Examples like nuclear build programmes show that future engineers and technicians now in school must be trained locally to avoid importing talent.

The localisation of energy and employment also surfaced as a key challenge. While some communities embrace renewables as diversification opportunities, others resist large-scale projects due to landscape impact or planning frustration. Ensuring **local benefit-sharing and inclusion in decision-making** was highlighted as critical to sustaining social licence.

E. Speed, Investment, and Planning Barriers

Despite the UK's strong progress — cutting emissions by over 50% since 1990 and sourcing more than half of electricity from low-carbon sources — momentum risks stalling. The panel identified several structural barriers:

- Slow planning processes and vexatious judicial reviews delay delivery.
- **Grid capacity constraints** with connection waits exceeding a decade impede investment.
- **Policy inconsistency** creates uncertainty for developers and financiers. Calls were made for:
- Streamlined, predictable planning frameworks.
- Clear long-term timelines for projects (e.g., nuclear, offshore wind).
- Consistent cross-party support to ensure policy durability beyond electoral cycles.

F. Rural and Regional Tensions

A dissenting perspective highlighted regional discontent — particularly in agricultural and rural counties — over large-scale renewable developments and grid expansions. Concerns included:

- The visual and environmental impact of solar and wind farms on farmland.
- A perception that London and urban areas reap the benefits while rural communities bear the cost.
- The need to balance food security with land use for clean energy.

Others countered that renewable deployment affects **less than 1% of farmland**, and that diversification offers farmers new revenue streams and resilience against climate-related crop failures.

G. Competing Transitions: Energy, AI, and Defence

As the discussion broadened, panellists recognised that the UK faces multiple simultaneous transitions — digital (AI and data centres), defence, and energy.

Energy was widely viewed as the **foundation that underpins all others**:

- AI infrastructure and data centres require vast, stable electricity supplies.
- Defence modernisation depends on secure, affordable domestic energy.
- Without clean, cheap power, broader growth ambitions cannot materialise.

In short, **energy transition is not a competing priority but an enabler** of every other national strategy.

3. Key Messages and Consensus Points

Despite differing philosophies, several unifying principles emerged:

- 1. The UK must sustain long-term policy certainty to remain a premier destination for green investment.
- 2. **Energy affordability** is the political linchpin of public support bills must fall through smarter financing, reform of levies, and innovation.
- 3. Skills and local empowerment are essential for a just transition.
- 4. **Planning and grid reform** must accelerate dramatically to match the pace of ambition.
- 5. **Leadership matters** both governmental and corporate. The business community must speak confidently about the opportunities of transition and counter misinformation with evidence.
- 6. **Global collaboration** remains vital: the UK's credibility as a leader rests on keeping its commitments and inspiring others to do the same.

4. Closing Reflection

The session concluded with a recognition that **the UK's net zero journey is at a crossroads**. The nation's early leadership has given way to competing narratives — one focused on urgency and innovation, the other on caution and cost.

What will determine the next phase is not merely technology or finance, but trust: trust that the transition delivers for ordinary people, trust that policies endure beyond elections, and trust that leadership is rooted in action rather than rhetoric.

As one participant summarised: "Ultimately, this is about speed, cost, and people feeling the benefit."

Panel 2 Overview



From Left to Right: Ian Catterall, Howden CAP; Joe Dutton, AXIS; David Mackey, The Carbon and Energy Fund (CEF); Allan Baker, Société Générale; Dr Rebecca Heaton, KPMG (Moderator)

Panel 2: Financing Net Zero: Unlocking Investments and Financial Frameworks for a Sustainable Future

Session Overview

This session explored one of the most fundamental questions in the global net zero journey: how to finance the energy transition at scale.

While technology continues to advance rapidly, the ability to mobilise and de-risk the trillions of pounds needed for decarbonisation remains the defining challenge of the next decade.

The discussion brought together senior voices from banking, insurance, project development, and risk advisory — each offering a perspective on where capital can come from, how it can be structured, and what mechanisms are needed to ensure that innovation meets investability.

1. The Financing Challenge: From Vision to Delivery

Participants agreed that financing the energy transition is not a single question of *where* money will come from, but rather *how* and *when* it flows through the lifecycle of a project.

• Different stages require different capital.

Early-stage technologies and developments need high-risk, flexible "development capital" — often unavailable from traditional lenders. Once projects are proven and operational, they can attract long-term institutional investors.

• Bridging the 'valley of death'.

Many promising technologies fail between the demonstration and commercial stages because of the lack of transitional funding. Participants called for new instruments to close this gap — combining public seed funding, insurance-based risk covers, and blended finance.

• Engineering first, finance second.

Projects must start from sound technical fundamentals. Once robust engineering solutions are in place, capital follows more naturally because risk and returns are better defined.

2. Policy Stability: The Bedrock of Investor Confidence

Policy risk was repeatedly identified as the **single greatest obstacle** to financing clean energy. Investors and financiers require predictability — not perfection.

- Long-term consistency across political cycles was described as essential. Frequent policy shifts, even if well-intentioned, erode confidence.
- Historical examples show that clear and stable frameworks work: the UK's offshore wind success was built on cross-party consensus, Contracts for Difference (CFDs), and a transparent long-term roadmap.
- The message to policymakers was unequivocal: "Don't change what works."

When governments retroactively alter tariffs or subsidies, capital exits overnight — and rebuilding that trust can take a decade.

Participants highlighted that the UK's experience now serves as a global template for risk allocation — with emerging markets in Asia and the US adopting similar frameworks.

3. The Role of Insurance: From Payouts to Enabling Investment

The discussion shifted from traditional perceptions of insurance as a reactive "safety net" to its emerging role as a **strategic enabler of finance**.

Insurance as contingent capital.

By underwriting new technologies and project performance, insurers effectively provide the confidence investors need to commit funds.

• De-risking innovation.

New technologies such as geothermal, floating offshore wind, and advanced storage rely on insurers' expertise to model and mitigate performance risk. Insurance data is helping shape technology evolution — learning from failures and accelerating maturity.

• **Parametric products** (covering events such as lack of sun or wind) and "wraparound" project covers are bridging gaps between exploration, construction, and operation phases.

• Integration with finance.

The boundary between insurers, brokers, and lenders is narrowing — with insurance increasingly seen as a form of **blended capital** that reduces exposure and unlocks cheaper finance.

4. Lessons from Technology Crossovers

Several speakers highlighted that much of what is considered "new" in clean energy is not entirely novel:

- Carbon capture, geothermal, and offshore wind share strong technical parallels with established oil, gas, and heavy-industry processes.
- This overlap means that risk can be modelled based on decades of operational data from drilling and well performance to subsea engineering.
- The energy transition therefore represents *evolution* more than revolution, and finance can price that risk with growing confidence.

The challenge, however, remains scaling up from **first-of-a-kind** to **eighth-of-a-kind** — the point at which financiers and insurers gain sufficient track record to reduce costs.

5. Carbon Capture, Usage and Storage (CCUS): The Next Frontier

CCUS was described as an area where the UK has already demonstrated global leadership, having completed the world's first project-financed carbon capture scheme.

- **Risk familiarity:** CCUS draws on established subsurface and reservoir engineering expertise, reducing technical uncertainty.
- Commercial uncertainty: While storage and transportation risks can be managed, the "use" element turning captured carbon into valuable products remains underdeveloped and lacks markets of scale.
- Policy continuity: Future project pipelines remain unclear. Participants called for a
 defined long-term programme similar to offshore wind, to ensure momentum is not
 lost.

6. Emerging Pressures: AI, Data Centres, and Grid Capacity

The panel warned that new, non-climate drivers such as **AI and digital infrastructure** could significantly reshape the energy investment landscape.

- The rise of data centres is creating **massive new electricity demand**, often concentrated geographically and required on very short timelines.
- To meet these needs, developers are increasingly building **on-site power generation** (solar, battery, and gas) to avoid grid delays adding pressure to supply chains.
- **Grid connection bottlenecks** and the rising cost of gas turbines illustrate how technology and data growth intersect with the energy system.
- The consensus: the energy transition cannot be planned in isolation from the digital transition both will compete for the same infrastructure and capital.

7. Community Engagement and Public Trust

As energy projects proliferate across rural and coastal regions, **social licence** is emerging as a key determinant of success.

- Many communities feel blindsided by the scale of new infrastructure particularly large solar farms, wind installations, and interconnectors.
- Historically, the energy system was centralised and remote; the renewables era is decentralised and visible.
- The promise of lower bills a cornerstone of political messaging has not yet materialised, undermining trust.
- Participants stressed that **early engagement**, **transparency**, **and tangible local benefits** (such as shared ownership or local reinvestment) are essential.
- There is also frustration at fragmented planning processes each project assessed in isolation rather than strategically across regions.

Without reform, local resistance will continue to delay or derail critical infrastructure.

8. Climate Resilience and the Insurance Stress Test

The discussion returned to the escalating impact of **climate change on insurability**:

- More frequent, severe, and costly weather events from US hailstorms damaging solar farms to European floods and wildfires — are threatening the viability of certain assets.
- As risks grow, **insurance premiums rise**, and in some cases coverage becomes unavailable making projects uninvestable.
- There is a growing "protection gap" between what can be insured and what is needed to sustain investor confidence.
- Adaptation and resilience historically underfunded compared to mitigation must become core components of energy finance.

Participants questioned whether governments and private finance are equipped to fund large-scale defensive infrastructure (e.g., flood defences, coastal barriers) in an era of tighter public budgets.

9. Risk Allocation and the Supply Chain Reality

A recurring concern was the unfair transfer of risk down the supply chain.

Developers and investors are increasingly expecting contractors and suppliers to absorb fixed-price, lump-sum risks that were never designed for them.

- The call was for risk to sit with those best able to manage it.
- Excessive pressure on contractors undermines sustainability, leading to squeezed margins and, ultimately, project failures as seen in parts of the offshore wind industry.
- Governments and financiers may need to provide temporary backstops for first-of-a-kind technologies until markets mature.
- The lesson: no one can finance what no one is willing to risk.

10. Closing Reflections: Collaboration, Clarity, and Courage

Despite differing perspectives, several unifying messages resonated:

1. **Capital exists.** There is no shortage of money for bankable projects — only a shortage of *bankable structures*.

- 2. Policy clarity is priceless. Investors and insurers will follow certainty over ideology.
- 3. **Insurance is no longer peripheral.** It is central to how capital is deployed, projects are de-risked, and technologies evolve.
- 4. Adaptation and resilience must catch up with mitigation.
- 5. Community trust must be rebuilt through transparency, fairness, and shared benefit.
- 6. The energy transition must be financed as an ecosystem linking engineers, financiers, insurers, and policymakers in common purpose.

The panel concluded that the energy transition is not just an engineering challenge but a *confidence challenge*.

To bridge the gap between ambition and action, the UK must align financial innovation with public trust and political stability — proving once again that leadership is built not on promises, but on predictable delivery.

Panel 3 Overview



From Left to Right: Neil Kenward, Ofgem; Lawrence Slade, Energy Networks Association (ENA); Susana Neves e Brooks, National Grid Electricity Distribution; Andrew Hibberd, Ecotricity; Simon Morrish, Xlinks Limited; Sam Mathew, Microsoft; Simon Virley, KPMG (Moderator)

Panel 3: Powering a Net-Zero Grid: Building a Resilient, Affordable, and Inclusive Electricity System

Session Overview

This panel examined one of the most urgent challenges facing the UK energy transition: how to modernise, expand, and digitalise the national grid to deliver a decarbonised, secure, and affordable electricity system.

The discussion united perspectives from the regulatory, transmission, distribution, generation, and technology communities — revealing both optimism and concern about whether the UK can deliver the scale of infrastructure needed at the pace required.

The conversation explored planning reform, regulatory frameworks, connection bottlenecks, AI and data impacts, interconnection, community engagement, and consumer affordability — all within the shared understanding that the grid lies at the heart of the UK's economic and industrial transformation.

1. The Core Challenge: Capacity, Connections, and Coordination

The panel began by acknowledging that the UK's existing electricity network is under immense strain. With the rapid growth of renewables, EVs, heat pumps, and AI-driven data centres, electricity demand is expected to surge exponentially over the next two decades.

Key points included:

- **Planning and regulation** emerged as the two most pressing barriers to delivery. Without faster consenting and a fit-for-purpose regulatory framework, even the most ambitious infrastructure plans will stall.
- **Coordination** between planning authorities, regulators, and network operators remains fragmented, leading to duplication and delays.
- The panel called for a single, joined-up delivery vision aligning investment, planning, and policy to unlock grid expansion at pace.

One participant summed it up succinctly: "You can have finance, but if you don't have planning, you can't deliver — and if you have planning but no regulatory clarity, you still can't build."

2. Regulatory Reform and Investment Certainty

The regulator's recent initiatives were highlighted as steps in the right direction. Accelerated approval processes, pre-ordering rights for key components, and upcoming price control reforms were seen as evidence of proactive effort to **cut connection delays and unlock capital**.

However, several concerns persisted:

- **Regulatory cycles are too rigid.** The need for flexibility within price controls was emphasised, as technological and market realities evolve faster than regulation.
- Certainty attracts capital. Investors need stable, long-term policy commitments that transcend political cycles.

• Accountability and incentives must be balanced: regulators must push delivery performance while ensuring consumer protection and value for money.

In essence, the UK must move from regulatory caution to regulatory enablement — empowering delivery while maintaining oversight.

3. Tackling the Connections Queue

The panel recognised the **connections backlog** as one of the most visible symptoms of systemic constraint. Projects wait years — sometimes over a decade — for grid access.

Current reforms aim to address this through:

- A new "first ready, first connected" model, replacing outdated "first come, first served" frameworks.
- Better prioritisation of projects that are genuinely deliverable, to clear "ghost" developments from the queue.
- Collaboration across transmission and distribution operators to enable flexible, regionalised approaches.

The consensus: **the connections reform must be done once and done right**. If rushed or incomplete, it could add years of delay to the transition.

4. Affordability and Consumer Fairness

While billions are being invested in grid reinforcement, affordability for consumers remains the political and moral test of success.

Key insights:

- The continued linkage between **gas and wholesale electricity prices** distorts the market and inflates bills. Breaking that link could save households hundreds of pounds annually.
- Costs must not fall disproportionately on consumers. There was concern that too much of the investment burden is being passed through energy bills rather than managed through fairer, system-wide mechanisms.
- **Flexibility markets** enabled by smart meters, storage, and dynamic tariffs will eventually help consumers participate and lower costs, but progress remains slow.

As one panelist noted: "The net zero transition must be one that people can afford to believe in."

5. The Role of AI and Digitalisation

Artificial Intelligence was identified as both a demand driver and an enabler of the energy transition.

AI's dual impact:

- On the **demand side**, data centres and computational infrastructure could significantly increase load. However, fears may be overstated newer AI data centres are becoming more efficient than early projections suggested.
- On the **supply side**, AI offers immense potential:
 - **Dynamic line rating** and predictive maintenance can increase grid throughput by up to 30%.
 - o **Planning and forecasting** can be revolutionised through machine learning.
 - Optimised connection allocation can accelerate network access and reduce idle capacity.

The message was clear: AI should not only be seen as a threat to energy security, but as a powerful tool to enhance efficiency, optimise investment, and engage communities more intelligently.

6. Interconnection and International Energy Flows

Interconnection was presented as a **strategic necessity** — enabling the UK to share, store, and trade electricity with its neighbours to balance intermittent renewables.

- Long-distance interconnectors can smooth regional supply gaps and mitigate price volatility.
- Examples of existing projects demonstrate mutual benefits but highlight the painful reality: major interconnectors have taken **15 years or more** to deliver due to planning and policy delays.
- Policymakers were urged to adopt a more agile, forward-looking approach that recognises interconnection as critical infrastructure equal in importance to nuclear or offshore wind.

The vision: a global, interconnected clean energy grid capable of redistributing power across borders to stabilise markets and support resilience.

7. Community Engagement and Social Licence

Perhaps the most passionate discussion focused on winning hearts and minds.

The scale of infrastructure required — transmission lines, substations, interconnectors — is immense, and resistance is growing in rural and coastal regions.

Key lessons:

- **Engage early, locally, and honestly.** Consultation should begin before plans are fixed, not after.
- National messaging must connect to personal benefit. People support the transition when they see local jobs, community reinvestment, and better futures for their families.
- Campaigns such as "Moving the Grid Forward" have already improved public sentiment, demonstrating that trust can be built with consistent, transparent communication.

The panel agreed: **community support is the new currency of delivery**.

8. The Role of Distribution: Empowering the Consumer

Distribution networks were described as **the unsung heroes of the energy transition**. While "there's no transition without transmission," distribution enables local energy independence, consumer empowerment, and demand-side participation.

Key points:

- Future homes will increasingly generate, store, and export their own electricity.
- Smarter local networks must be built with future flexibility in mind capable of managing bi-directional flows and new technologies like EV-to-grid.
- Education is essential: customers must understand their role in balancing the system and managing bills.
- Every street upgrade or cable installation must be **strategically planned and socially justified** to avoid disruption and resentment.

The transformation of distribution networks is central to **decentralising and democratising energy**.

9. Resilience, Microgrids, and Local Innovation

The discussion also touched on resilience in an era of climate shocks.

Rural communities, particularly in areas like Wales and Scotland, increasingly explore **microgrids and local generation** as safeguards against power outages.

These decentralised models can complement national systems — provided they are integrated into the broader grid digitally and operationally.

Participants stressed that microgrids are not a rejection of the national grid, but an enhancement of its resilience — a pragmatic response to geography, climate, and consumer empowerment.

10. Hopes and Fears: The Future of the Grid

The session closed with reflections that captured both the ambition and the anxiety of this pivotal moment:

Hopes

- That the grid build-out will underpin the UK's next industrial revolution, creating thousands of skilled jobs and enabling long-term economic growth.
- That regulatory frameworks and policy clarity will **unlock record levels of investment** at pace.
- That **AI**, **digitalisation**, **and innovation** will be embraced to deliver efficiency and resilience.
- That **public trust and engagement** will transform the grid from an invisible system into a shared national mission.

Fears

- That **policy inertia and inconsistent government decisions** will slow momentum and deter investors.
- That **planning reform and regulatory updates** won't arrive in time to meet 2030 and 2035 targets.
- That pace of delivery not technology will be the UK's greatest vulnerability.
- That the focus on AI's energy consumption will overshadow its potential as a solution.

Conclusion

The message from this panel was resoundingly clear:

The UK's energy transition will succeed or fail on the grid.

Every net zero ambition — from electrified transport to AI innovation — depends on building a system that is faster, smarter, more interconnected, and more inclusive than anything before it.

This requires courage from policymakers, consistency from regulators, collaboration across sectors, and communication that wins hearts as well as minds.

The grid is no longer just infrastructure — it is the backbone of a net zero economy, the enabler of energy democracy, and the key to a sustainable national future.

Panel 4 Overview



From Left to Right: Andrew Elmes, Siemens Gamesa; Adrian Del Maestro, AECOM (Moderator); Abbie Badcock-Broe, National Grid; Alessandra De Zottis, Sonnedix; Tim Montagu, British Hydropower Association; Dave Tattershall, Solarport

Panel 4: Energising Tomorrow: Strategic Infrastructure and Investment for the UK's Renewable Powerhouse

Session Overview

This panel explored the pressing question of how the UK can mobilise the **infrastructure**, **capital**, **and innovation** required to achieve *Clean Power 2030* — a goal that demands not only the rapid scaling of renewable generation, but also the parallel development of grids, storage, and supply chains that can sustain it.

The discussion brought together perspectives spanning the technology supply chain, grid operators, renewable developers, hydro storage advocates, and UK manufacturing. Despite differences in emphasis, a clear consensus emerged: the UK's ambition is commendable, but delivery will depend on aligning speed with quality, vision with execution, and investment with public trust.

1. Setting the Context: Ambition Meets Scale

The session began with a reflection on the global and domestic energy landscape:

- The **World Meteorological Organization** has reported record levels of carbon emissions, with **climate damage costs** surpassing \$1.4 trillion globally in 2024.
- Yet, there are signs of progress renewables now provide over 40% of global electricity and have overtaken coal as the dominant generation source.
- In the UK, over 50% of power generation already comes from renewables and low-carbon sources, with coal fully phased out as of 2024.

However, the panel emphasised that delivering *Clean Power 2030* — requiring around £200 billion of investment in under a decade — represents one of the most complex infrastructure undertakings in British history.

The core question:

"Should the UK prioritise scaling renewables at all costs, or focus on building the grid and storage systems that make this transition truly sustainable?"

2. Renewables Growth vs Grid Readiness — A False Choice

Panelists agreed that the UK's offshore wind and solar expansion is a national success story. The Contract for Difference (CfD) mechanism has underpinned steady investment, transforming renewables from niche technologies into industrial powerhouses.

However, as one participant noted, "We've now built the generation — the grid must catch up."

Key points included:

- The existing grid was largely constructed in the 1950s, designed for a centralised fossil
 fuel system. The challenge now is to modernise it into a decentralised, digital, bidirectional network.
- Major upgrades are underway, including **17 large-scale transmission projects** under the Accelerated Strategic Transmission Investment (ASTI) framework, with several already in construction.
- Grid enhancement is essential to avoid spiralling **constraint costs**, which could exceed **£8 billion annually by 2030** if network capacity remains insufficient.

Ultimately, the panel rejected the notion of "either/or."

The UK must simultaneously build renewables, strengthen the grid, and integrate flexibility — or risk losing momentum entirely.

3. Storage and Flexibility — The Missing Piece

Storage was described as the "unsung hero" of the energy transition.

While renewables provide cheap, clean power, their intermittency demands large-scale energy storage to create true baseload capability.

Highlights included:

• **Pumped hydro** remains the world's most proven long-duration storage technology, accounting for 90% of all global storage capacity.

- The UK has **13 proposed hydro storage schemes**, mostly in Scotland and Wales, but none have yet reached construction.
- Participants urged government to **expand the Cap & Floor mechanism** to support long-duration assets technologies that can store energy for 100+ hours and operate for over a century.
- Battery Energy Storage Systems (BESS) were recognised as critical for short-duration balancing, while pumped hydro should handle day-to-day or weekly cycles.

The conclusion was unequivocal:

"Storage is not optional. It is the key to making renewables act like baseload and unlocking grid resilience."

4. Supply Chain, Skills, and Industrial Strategy

The conversation turned to the **bottlenecks limiting delivery** — skills shortages, supply chain fragility, and manufacturing dependency on imports.

Key insights:

- The UK's energy infrastructure build is constrained not only by capital but by a lack of skilled labour and domestic capacity.
- Companies are expanding apprenticeship and graduate programmes to train thousands of new workers across engineering, digital, and construction disciplines.
- The creation of strategic infrastructure units within utilities aims to coordinate delivery and secure long-term order books for supply chain partners.
- The decline of UK manufacturing from 25% of GDP in the 1970s to 8% today was identified as a missed opportunity. Participants called for "reindustrialising through renewables", using the energy transition to anchor new domestic manufacturing.

One UK solar manufacturer emphasised that achieving the government's 47GW solar target by 2030 could generate over £8 billion in business value, supporting thousands of UK jobs if local content is prioritised.

5. The European Perspective — Learning from Abroad

The panel broadened the lens to Europe, identifying common challenges and emerging best practices:

• **Curtailment** — the forced reduction of renewable generation due to grid saturation — is rising across Europe, with average rates of 2% today projected to reach 11% by 2040.

- In markets such as Spain and Chile, curtailment has already reached 20–25%, severely affecting investor confidence.
- The key to prevention lies in **hybridisation** combining solar, storage, and flexible assets under single connection points to optimise output and reduce curtailment losses.

Panelists warned that **deploying renewables without grid reform risks diminishing returns**, and urged regulators to design frameworks that extract full system value from flexible technologies.

6. Investment Confidence — Policy Certainty Above All

Investment appetite remains strong, but panelists stressed that **policy stability and long-term signals** are essential for sustaining momentum.

Highlights:

- The UK's regulatory models including the CfD and Regulated Asset Base (RAB) were praised as global benchmarks for bankable, low-risk structures.
- To maintain leadership, the UK must **extend its vision beyond 2030** with clear postelection commitments and a transparent 2035 delivery roadmap.
- Investors and manufacturers require **pipeline certainty**, not one-off targets, to justify capital-intensive decisions such as new factories or grid component plants.

As one participant noted, "The UK is still a good place to invest — but only as long as it continues to act like one."

The growing political divide over net zero was seen as a potential risk. However, compared to markets like France and Italy, where retroactive subsidy changes have shaken investor trust, the UK's regulatory credibility remains strong.

7. Market Narrative — Winning Public Support

A powerful theme running throughout the day was the **need to reshape the national** conversation around energy.

Panelists agreed that the UK must communicate the transition not as a burden, but as a **driver** of prosperity, security, and sovereignty.

Key takeaways:

- Cost and energy security are the public's priorities. The narrative should focus on how renewables lower long-term bills and reduce exposure to volatile global gas markets.
- The UK is now almost entirely dependent on imported gas reinforcing the importance of **homegrown**, **independent energy**.

• **Public engagement** should be transparent about costs but highlight the price of inaction: PwC estimates each UK household is now £20,000 worse off due to decades of underinvestment in infrastructure.

The overarching message:

"We can't afford not to build — the real cost lies in delay."

8. Outlook: Building for the Century Ahead

The panel concluded with a unified call to **build infrastructure designed to last a century**, not a decade.

From transmission lines and solar farms to tidal range and pumped hydro, the UK must prioritise:

- **Durability and flexibility** ensuring assets can evolve with future technologies.
- **Domestic capability** securing the materials, workforce, and supply chain resilience needed to deliver at scale.
- Long-term financing frameworks that match asset lifespans of 50–100 years.

Ultimately, Clean Power 2030 is not just a milestone — it is the foundation of Britain's economic renewal.

9. Closing Reflections

The session's closing reflections encapsulated both optimism and urgency:

Hopes

- That the UK will **realign infrastructure investment with industrial growth**, making the transition a generator of jobs and prosperity.
- That renewables, storage, and grid innovation will work in harmony, not competition.
- That government, industry, and investors will sustain a **consistent**, **bipartisan** approach through the 2030s.

Fears

- That **political volatility** could erode investor confidence.
- That planning and grid reform delays could derail the UK's targets.
- That failing to act decisively now will impose far greater economic and social costs in the decades ahead.

Conclusion

This discussion underscored a simple truth:

The UK has the ambition, technology, and capital to lead the world in renewable energy — but delivery depends on speed, stability, and strategy.

Achieving *Clean Power 2030* is not a race against time alone; it is a race against complacency, fragmentation, and short-termism.

To win it, the UK must build — smarter, faster, and stronger — for a future that is not only clean, but enduring.

Panel 5 Overview



From Left to Right: Andrew Champ, GE Hitachi Nuclear Energy International; Virginia Crosbie, Former Member of Parliament for Ynys Môn; Simon Emeny, LRQA; Andrew Storer, Nuclear Collaboration Ltd (NucCol); Robert Alford, United Kingdom National Nuclear Laboratory; Mothi Sayeeram, KPMG (Moderator)

Panel 5: Nuclear Horizons: Empowering the UK's Energy Transition through Nuclear Technology

Session Overview

This panel explored one of the defining questions of the UK's energy transition: Can nuclear power truly become the cornerstone of a net zero Britain?

As renewables continue to expand and electricity demand surges due to electrification, digitalisation, and data-driven technologies, nuclear is re-emerging as a critical, low-carbon, and reliable energy source. The conversation examined the role of nuclear alongside renewables, the potential of Small Modular Reactors (SMRs), financing and regulatory frameworks, workforce development, and public confidence.

What emerged was a clear, collective message: **nuclear is no longer an option** — **it is a necessity**. But to realise its promise, the UK must move from rhetoric to action, accelerating deployment and building enduring public and investor confidence.

1. The Case for Nuclear — Security, Stability, and Sovereignty

The discussion began by reflecting on the shifting global context.

Energy crises, geopolitical instability, and the growing urgency of climate targets have propelled nuclear back into the spotlight. Around the world, governments are committing to **tripling nuclear capacity by 2050**, recognising it as essential to both energy security and decarbonisation.

Panelists agreed that the UK's historical leadership in nuclear gives it a strong foundation — yet decades of **stop-start policy**, **indecision**, **and underinvestment** have eroded momentum.

"Five years ago, nuclear provided around 20% of our electricity. By the end of this decade, we risk having just one station operational if we don't act."

The consensus: the UK must rebuild nuclear as a core component of its clean energy strategy, balancing intermittency from renewables with dependable, zero-carbon baseload power.

2. From Gigawatt to Modular — The SMR Opportunity

A recurring theme was the potential of **Small Modular Reactors (SMRs)** to revolutionise the UK's nuclear landscape.

While large-scale plants such as Sizewell C remain vital, SMRs offer a more flexible, replicable model — **smaller**, **faster to deploy**, **and easier to finance**. Each SMR can deliver hundreds of megawatts of electricity, making them suitable for industrial clusters, decommissioned coal sites, and even data centres.

The advantages include:

- Shorter build times (4–5 years compared to over a decade for large reactors)
- Scalability and repeatability, enabling standardised manufacturing and rapid roll-out
- Attractiveness to private capital, given lower entry costs and modular expansion potential

However, challenges remain around **risk-sharing and revenue models**. The panel called for **feed-in style tariffs or CfD-type mechanisms** to provide early investor confidence — akin to what jumpstarted offshore wind.

"We need a new technology feed-in tariff to get the ball rolling — once the first few are built, confidence and capital will follow."

3. The Market-Led Shift and the Rise of Data Centre Demand

One of the most striking observations was the emergence of **private sector demand driving** nuclear innovation.

Tech giants, hyperscalers, and data centre developers are increasingly seeking **on-site**, **stable power solutions** as AI and cloud infrastructure expand. These energy-intensive operations are catalysing market-led approaches to nuclear, with **private investors and developers partnering directly with SMR providers**, often without waiting for government intervention.

This represents a **paradigm shift** — from a government-driven model to a **commercially driven ecosystem** where nuclear can meet private industrial demand while contributing to national energy resilience.

"Data centres have changed the game — they need power now, and they have the capital to make it happen."

4. Financing the Future — Unlocking Capital for Nuclear

Finance was described as the missing piece in the UK's nuclear puzzle.

While the country has expertise, technology, and sites, **capital mobilisation** has been slower than in other regions. The introduction of the **Regulated Asset Base (RAB)** model was highlighted as a crucial enabler — allowing investors to earn returns during construction, reducing borrowing costs, and ultimately lowering consumer prices.

The panel stressed the importance of:

- **Green taxonomy for nuclear**, ensuring equal access to sustainable investment capital as renewables
- Global competitiveness, as other markets (Canada, US, EU) offer clearer financial incentives
- **Risk-sharing models**, distributing development and construction risk among OEMs, investors, and government to unlock large-scale deployment

"One-third of the cost of nuclear electricity is the cost of borrowing. The RAB model can cut that significantly — turning financial barriers into opportunities."

5. Regulation and Delivery — Moving from Review to Reform

While the UK's Office for Nuclear Regulation (ONR) enjoys global respect, its lengthy processes were recognised as a major bottleneck. The panel supported the establishment of a Nuclear Regulation Task Force to streamline approvals and reduce timelines.

At present, design assessment and site licensing can take **up to four years** — a pace inconsistent with 2030 ambitions.

Recommendations included:

- Compressing GDA timelines by leveraging **international collaboration** (e.g., mutual recognition with Canada and the US)
- **Fast-tracking planning and environmental consents** by using existing national data sets rather than duplicative site surveys
- Adopting a more **industrial approach to siting** treating nuclear facilities like other major infrastructure to accelerate permitting

"It's time to treat nuclear builds like national logistics hubs — efficient, safe, but fast. The technology is ready; bureaucracy is not."

6. Jobs, Skills, and a Just Transition

Nuclear was framed not just as an energy solution, but as a **national industrial strategy**.

Each project represents **decades of economic benefit**, from design and construction to operation and decommissioning — spanning more than a century of local employment.

Key insights:

- Major builds like Hinkley Point have already injected **over £5.6 billion** into regional supply chains.
- Nuclear can **revitalise coastal and industrial regions**, anchoring new clusters around SMR and gigawatt plants.
- The **apprenticeship and skills pipeline** must be expanded urgently to train welders, engineers, and digital specialists for the nuclear renaissance.

"These are high-skill, high-wage, long-term jobs that can sustain communities for generations."

The panel stressed the importance of **co-locating SMRs with heavy industries** — such as desalination, ceramics, or metal production — to create integrated low-carbon ecosystems and reduce grid strain.

7. Building Public Confidence — Trust, Communication, and Social Licence

Public trust was identified as both a prerequisite and a barrier.

Decades of secrecy and misinformation have left communities wary of nuclear projects, even as newer designs offer enhanced safety and minimal waste. The panel emphasised open engagement and local empowerment as critical to securing social licence.

Key points:

- Communities with existing or historic nuclear sites already demonstrate high levels of acceptance proof that **familiarity builds trust**.
- **Transparent communication** about local benefits, safety, and job creation is more effective than technical reassurance.
- Education and outreach, from primary schools to universities, can help normalise nuclear and inspire the next generation.

"We must stop telling people we're safe — we must show them why they're part of something beneficial."

International examples such as Finland were cited, where strong community benefits — including **reduced electricity bills** — have fostered overwhelming local support.

8. Critical Materials and Fuel Security

The conversation also touched on **resource security** — from uranium and zirconium to specialist alloys required for reactor construction.

While the UK is well-positioned industrially, panelists called for:

- A national materials and minerals strategy ensuring secure, ethical supply chains
- Greater collaboration across the AUKUS partnership and Commonwealth allies to stabilise uranium sourcing
- **Domestic fuel fabrication capacity** to underpin energy independence

As one panelist noted, "The supply chain will follow the investment signals — if we commit to building 20 SMRs, the market will build the fuel factories."

9. Beyond Electricity — Nuclear's Role in the Wider Energy System

The discussion concluded with a powerful reminder that **nuclear's potential extends beyond electrons**.

Only 20% of UK energy demand is for electricity; the rest comes from heat, transport, and industrial processes. Nuclear can play a transformative role in:

- **Hydrogen production** using high-temperature steam electrolysis
- Synthetic fuel generation for aviation and shipping
- Industrial heat applications for steel, chemicals, and desalination

[&]quot;Nuclear is not just power — it's heat, hydrogen, and a foundation for industrial decarbonisation."

10. Outlook: From Ambition to Acceleration

The panel closed on an energised yet realistic note.

Hopes

- That the UK will finally move beyond political cycles and deliver a sustained nuclear build programme.
- That **SMRs**, large reactors, and hydrogen integration will form a unified energy system.
- That nuclear's image will shift from legacy to leadership.

Fears

- That bureaucratic inertia and political turnover will once again stall progress.
- That without **policy certainty**, investment and talent may move overseas.
- That delay will cost the UK both economically and strategically in the race for clean industrial power.

The message was clear:

"The technology is proven. The expertise is here. The capital exists. What's needed now is leadership — and speed."

Conclusion

This session captured the nuclear industry at a pivotal moment — **poised between potential** and delivery.

Nuclear stands not as an alternative to renewables, but as **the enabler of their success** — the stable backbone of a decarbonised energy future.

If the UK can align **finance**, **regulation**, **and political will**, nuclear could drive a new industrial revolution — one powered by clean energy, sustained by skilled British jobs, and trusted by its people.

The time for debate has passed. The era of delivery has begun.

Panel 6 Overview



From Left to Right: Sarah Mintey MBE, Developing Experts; Simon Richardson, Energy Coast UTC; Lynne Matthews, Former Destination Nuclear Director; Jamie East, University of Cumbria; Lee Callaghan, ViRenewables; Greg Beach, V360XR; John Kraus, Engineers Without Borders UK (Moderator)

Panel 6: Building the Workforce of the Future: Skills for Energy Transition and Net-Zero Goals

Session Overview

This dynamic session brought together leaders from education, engineering, technology, and the energy industry to confront one of the UK's most pressing challenges: **how to equip the workforce to deliver net zero**.

With an estimated **10,000 new workers needed every year** to meet the UK's clean energy ambitions, the panel explored what systemic reforms are required to close the skills gap — and, crucially, how to foster a new culture of competence, collaboration, and inclusion.

The discussion moved beyond statistics and targets to the human realities shaping the transition — from inspiring schoolchildren to re-skilling existing workers, from building gender diversity to redefining how industry and education work hand in hand.

1. The Challenge — and Opportunity — of the Skills Gap

The panel began by recognising that the skills challenge is not just about numbers; it's about alignment and adaptability.

While the UK must recruit thousands of new entrants annually, there is also an urgent need to **upskill and retrain existing workers** within energy, engineering, and construction sectors. Many of these individuals possess the technical grounding to transfer into new industries such as renewables, hydrogen, and nuclear — yet lack access to modern training, funding, or defined pathways.

Speakers emphasised that this is **not a single intervention problem**, but one requiring alignment of effort, policy, and funding across government, education, and industry.

"We don't just need more people — we need to make the people we already have more capable, more mobile, and more confident."

2. Education and Industry — Connecting Early and Often

A central theme was the **disconnect between education and industry** — and the need to bridge it much earlier.

Representatives from the education sector stressed that industry engagement in schools remains sporadic, inconsistent, and often poorly structured. While young people are curious about energy, engineering, and sustainability, few have meaningful exposure to them.

Data shared during the session illustrated the scale of the challenge:

- **365,000 young people leave secondary school every year**, yet only half achieve a pass in mathematics a core gateway subject for technical careers.
- Less than 50% of students at Key Stage 4 (ages 14–16) have access to *any form* of work experience.
- Many schools struggle to host employer visits consistently due to lack of frameworks, coordination, or capacity.

Panelists called for a **national standard for industry engagement in schools** — ensuring quality, consistency, and equitable access.

"Government can't give young people a vision. Industry can. It's industry that inspires."

Early exposure, mentoring, and relatable role models were identified as key levers for increasing participation — particularly for girls and under-represented groups.

3. Competence over Compliance — Redefining What "Skilled" Means

A major insight of the discussion was the need to **shift from a "skills" mindset to a** "competence" mindset.

While skills refer to discrete abilities or certifications, competence encompasses the *application* of those skills in complex, real-world environments. In rapidly evolving sectors like offshore wind and hydrogen, competence is the real determinant of safety, quality, and productivity.

Participants argued that:

• Competence must be **continuously developed**, not certified once and assumed permanent.

- Companies must take ownership of defining and maintaining competence frameworks, rather than outsourcing training entirely.
- On-the-job learning, mentoring, and peer exchange are crucial "learning by doing" within operational environments.

"Training doesn't equal competence. A skilled workforce isn't necessarily a competent one."

This recognition signals a cultural reset: **building organisational learning systems**, not just individual qualifications.

4. Harnessing Transferable Talent — Oil, Gas, and Heavy Industry

The panel explored how to **mobilise the vast reservoir of experience** from traditional energy sectors.

While the UK's oil and gas workforce has long been viewed as the natural talent pool for offshore wind, CCUS, and hydrogen, speakers emphasised that technical transfer is not the only challenge — social and psychological transition matters too.

For many workers, the shift from oil platforms to wind turbines involves not just new technology but new working patterns, isolation, and social structures.

- Oil platforms traditionally offered communal settings and longer downtime; offshore wind work can involve confined spaces, short shifts, and reduced peer interaction.
- These environmental and cultural adjustments can determine whether skilled workers stay or leave.

Hence, competence development must include social learning and peer mentorship, not just technical retraining.

5. Responsibility and Funding — Who Should Lead?

One of the most candid debates focused on **who bears responsibility for equipping the workforce** — government, employers, or educators.

The consensus: all three must act together, but industry must take a far more active role.

Education leaders noted that schools can deliver new skills if funded appropriately — but "if you don't pay for it, you don't get it." Funding frameworks often dictate what can and cannot be taught, constraining responsiveness to industry needs.

Meanwhile, industry has sometimes **outsourced its training responsibility**, assuming colleges or government will fill the gap. This approach has eroded organisational learning capacity.

"Companies need to step up again. In the past, we trained our own people. We need to rebuild that sense of ownership."

6. Fix What We Have Before Building More

A striking observation came from the renewable energy perspective: while the UK continues to announce ambitious new wind and solar capacity, **up to half of existing onshore turbines are not fully operational** due to shortages of maintenance skills and technicians.

The issue is compounded by:

- Rapid iteration of turbine models, creating knowledge gaps and missing technical manuals.
- Lack of standardised training for repair and component replacement.
- Shortages of qualified lecturers in further education many leave for higher-paying industry jobs.

Panelists argued for redirecting some investment from new builds to maintenance, education, and capability retention.

"Before we build the next thousand turbines, let's make sure the ones we have are turning."

This pragmatic perspective underscored that net zero delivery is as much about maintaining performance as expanding capacity.

7. Technology and Immersive Learning — The Power of Virtual Experience

The conversation also highlighted the transformative potential of **immersive technology and simulation** in skills development.

Virtual reality (VR) and extended reality (XR) platforms are now enabling learners to:

- Experience environments that would be unsafe or inaccessible in real life such as wind farms, nuclear sites, or offshore installations.
- Engage in simulated procedures for safety, maintenance, and emergency response.
- Build familiarity and confidence before stepping into real operations.

Some organisations have already reduced onboarding courses from **three months to six weeks** through simulation-based training, with higher retention and engagement.

"VR isn't a gimmick — it's an accelerator for competence and confidence."

Virtual work experience initiatives are also expanding access for schools, particularly in regions without nearby industry hubs, allowing students to explore real-world environments aligned to their curriculum.

8. Diversity and Inclusion — Broadening the Talent Pipeline

The discussion on gender diversity generated both reflection and optimism.

While many sectors remain male-dominated, some technical colleges are now reporting **close** to 50% female participation in engineering programmes — a sign of progress driven by sustained outreach and relatable role models.

Still, barriers persist:

- Girls often lose confidence in mixed classrooms where they are a minority.
- Laddish cultures in apprenticeships or training centres can discourage participation.
- Many young women excel technically but lack confidence in self-promotion compared to male peers.

Solutions included:

- Establishing all-female cohorts or dedicated classes in certain technical subjects.
- Enhancing mentoring and networking opportunities.
- Redesigning workplace environments and job descriptions to ensure inclusivity and belonging.

"It's not just about attraction — it's about retention. A diverse workforce must also feel it belongs."

Panelists agreed that diversity is not a moral add-on but a performance imperative, expanding innovation, safety, and problem-solving across the sector.

9. The Passion Gap — Re-Humanising Industry Engagement

Several speakers urged industry to rekindle its passion and presence in education.

Educators called for consistent, enthusiastic engagement — not one-off assemblies, but long-term partnerships built on *touchpoints and mentorship*. Some successful examples include:

- "Golden Thread" frameworks linking companies to schools across multiple year groups.
- Employer-sponsored teaching posts and apprenticeships.
- Returning alumni as role models for younger students.

"A single inspiring teacher can change a life — so can a single inspiring engineer."

The most effective partnerships blend **funding**, **mentorship**, **and lived experience** — helping students see themselves in the energy transition, not just learn about it.

10. Closing Reflections

In closing, the panelists offered a unifying message:

The net zero transition is not just technological — it is profoundly human.

It depends on:

- A new culture of lifelong learning and continuous competence.
- Early, authentic engagement between industry and education.
- Empowering women and under-represented groups to lead.
- Restoring pride and purpose in the UK's technical professions.

"Every pair of hands comes with a brain. If we engage both, we multiply potential."

Ultimately, success will be defined not by how many gigawatts we build, but by how many people we equip, inspire, and trust to deliver them.

Conclusion

This session brought the human dimension of the energy transition into sharp focus. To meet the UK's net zero goals, **skills policy must become human policy** — one that values teachers as much as turbines, mentors as much as megawatts, and competence as much as credentials.

If the UK can align its education system, industry leadership, and social purpose, it will not only close the skills gap — it will build a **new generation of engineers, technicians, and innovators** capable of powering a cleaner, fairer, and more sustainable future.

Net zero will not be built by technology alone — it will be built by people.

Panel 7 Overview



From Left to Right: Jonathan Briggs, VPI (Moderator); Alex Milward, Department for Energy Security & Net Zero; Matthew Rhodes, Black Country Industrial Cluster; Jane Gaston, Net Zero North West; David Parkin, Progressive Energy; Chris Rowell, Tees Valley Combined Authority

Panel 7: Decarbonising UK Industrial Clusters: The Path to Net Zero

Session Overview

This session brought together leaders from government, regional industrial clusters, and major infrastructure developers to address one of the most complex and decisive challenges in the UK's energy transition — decarbonising industry through Carbon Capture, Utilisation and Storage (CCUS).

At its core, the debate examined how the UK can deliver CCUS at pace and scale, while maintaining industrial competitiveness, protecting jobs, and ensuring that decarbonisation strengthens — rather than undermines — regional economies.

The conversation revealed a clear consensus: **CCUS** is essential for achieving net zero, but its success depends on collaboration, investment confidence, and public legitimacy. If done right, it can anchor a new era of clean industrial growth. If done poorly, it risks becoming a costly missed opportunity.

1. The UK's CCS Advantage — From Obligation to Opportunity

The discussion opened with a striking statistic: the UK sits on over 78 billion tonnes of CO₂ storage capacity, one of the largest offshore reserves in the world. This endowment gives the UK a unique opportunity to turn CCUS from a compliance tool into a strategic industrial asset.

By 2050, the UK's CCUS sector could generate up to £30 billion in taxable income, driving domestic growth while supporting global decarbonisation. The potential is vast — spanning infrastructure, supply chain manufacturing, and long-term operational jobs.

Key message: CCS should not be viewed solely as a cost to industry, but as a catalyst for a new low-carbon economy — one that sustains energy-intensive manufacturing and creates enduring regional prosperity.

2. Jobs, Growth, and the Human Dimension of Decarbonisation

Government representatives reaffirmed that CCUS is as much a jobs and growth policy as a climate policy.

The current focus is to deliver **50,000 new jobs** in the UK's industrial heartlands, revitalising communities once defined by coal, steel, and heavy manufacturing. By aligning industrial decarbonisation with employment and export growth, the goal is to avoid the "cliff-edge" transitions that devastated past generations.

For example:

- Cement and steel producers are already seeing a **surge in job applications** as they embrace CCUS pathways.
- UK-developed carbon capture technologies are being exported globally to Saudi Arabia, Japan, Brazil, and beyond generating domestic manufacturing work in regions such as Huddersfield.

This "virtuous circle" — investment \rightarrow jobs \rightarrow exports \rightarrow reinvestment — is the foundation for a self-sustaining, globally competitive UK CCUS industry.

3. The Regional Reality — Balancing Growth and Equity

A powerful counterpoint emerged from industrial clusters without direct access to coastal CO₂ storage infrastructure.

While CCUS-enabled clusters such as the **Northwest (HyNet)** and **Teesside** are advancing rapidly, **inland manufacturers** — particularly in the **West Midlands and Black Country** — face high energy costs, limited connectivity, and existential pressures.

Without support, **thousands of energy-intensive SMEs risk closure**, even as new CCUS jobs are created elsewhere.

"We can't create 50,000 new jobs if 75,000 existing ones are lost."

The panel agreed that a "just industrial transition" requires:

- Targeted support for regions distant from CO₂ pipelines or ports.
- Tailored financial mechanisms for smaller emitters.
- A holistic strategy that ensures **no region or workforce is left behind**.

4. Hydrogen and CCUS — Twin Pillars of Industrial Decarbonisation

Hydrogen featured prominently as a complementary pathway alongside CCUS.

The Northwest's **HyNet** initiative and the **Peak Cluster** in the Midlands exemplify large-scale projects integrating carbon capture, hydrogen production, and CO₂ storage to decouple **economic growth from carbon emissions**.

Hydrogen's role includes:

- Decarbonising **hard-to-electrify industries** such as glass, steel, and cement.
- Acting as **flexible**, **long-duration energy storage**, stabilising the electricity grid as renewable penetration grows.
- Enabling regional "system batteries" vast underground hydrogen storage fields balancing seasonal supply and demand.

Crucially, hydrogen and CCUS are **mutually reinforcing**: blue hydrogen (from natural gas with CCS) creates immediate scale and infrastructure, while green hydrogen (from renewables) matures over time.

Insight: The UK's industrial decarbonisation strategy must integrate hydrogen and CCUS as **two halves of one system**, ensuring shared infrastructure, regulatory coherence, and investor confidence.

5. Building Investor Confidence — From Policy Ambition to Delivery Certainty

Investor appetite remains strong, but the panel emphasised that **policy consistency and regulatory clarity** are the ultimate drivers of confidence.

In the past year alone, more than £2 billion in private investment has flowed into UK CCUS projects, yet momentum is threatened by:

- Policy delays and changing political signals.
- Complex procurement processes and slow contract approvals.
- Rising costs across supply chains.

Investors are looking for **long-term visibility**: predictable business models, transparent funding frameworks, and bipartisan political support.

"Industry is ready to invest. What's missing is certainty."

The call to action: double down on delivery, maintain pace, and lock in confidence through stable, long-term frameworks that transcend electoral cycles.

6. A Just Transition — From Industrial Regeneration to National Renewal

The concept of a "just transition" threaded through every contribution.

Beyond emissions reduction, CCUS offers the chance to **reindustrialise the UK** — creating future-proof industries, revitalising local economies, and restoring pride of place.

In regions like the Northwest, Yorkshire, and Teesside, CCUS and hydrogen projects are catalysing:

- Skills renewal across construction, engineering, and manufacturing.
- Supply chain diversification, including SMEs and local contractors.
- **Community resilience**, ensuring the energy transition strengthens social and economic fabric rather than eroding it.

"The just transition is not just about keeping factories open — it's about building the next generation of opportunity across our regions."

7. The Economics of Transition — Who Pays, and How?

Perhaps the most candid discussion revolved around the cost and politics of decarbonisation.

The technology works — but scaling it requires answering one question: who pays?

CCUS is currently more expensive than emitting, meaning government support is essential during early deployment. However, as one participant noted, "government has no money—it's your money." The challenge is to design mechanisms that equitably distribute costs between **taxpayers**, bill payers, and industry, while delivering visible public benefits such as jobs and cleaner air.

Participants stressed that **societal buy-in is key**:

- Consumers must understand and value low-carbon products.
- Industry must demonstrate clear returns on investment and employment.
- Policymakers must articulate the benefits not just the costs of net zero.

"We must win back the public case for decarbonisation — not force it upon people, but show them it's what they want."

8. The Role of Government — Enabler, Not Sole Financier

There was recognition of government's progress in creating the world's most advanced CCUS regulatory framework. However, the panel warned against over-reliance on public funding.

With constrained budgets and competing national priorities — defence, healthcare, infrastructure — **industry and society must share responsibility**.

"To govern is to choose. If we want low-carbon industries, we must all help pay for them."

This requires creative financing — blending public investment, private capital, and international collaboration. It also requires a **national conversation** about the true value of decarbonisation and the willingness to pay slightly more today to avoid far greater costs tomorrow.

9. Acceleration and Competitiveness — The Need for Pace

A final unifying message emerged: the UK must move faster.

While Britain remains a global pioneer in CCUS policy and project development, other nations — notably the US, Japan, and Canada — are catching up fast, often backed by substantial subsidies.

Delays risk:

- Eroding investor confidence.
- Driving capital and skills overseas.
- Squandering the UK's early-mover advantage.

"We've set the pace globally — but if we slow down now, we'll lose the race."

Speed of delivery is not just about technology deployment; it's also about **visible results** — tangible local benefits that reinforce public and political support.

10. Outlook and Closing Reflections

As the discussion concluded, the panelists converged on four core imperatives for the future of UK CCUS:

- 1. **Ambition** Set a national vision that positions CCUS at the heart of Britain's industrial renewal.
- 2. **Pace** Deliver projects faster to secure investor trust and public confidence.
- 3. **Fairness** Ensure all regions share in the benefits of decarbonisation.
- 4. **Collaboration** Unite government, industry, and communities around shared outcomes, not competing interests.

"The UK has the technology, expertise, and geology to lead the world in carbon capture. The question is not can we — it's will we move fast enough to make it happen."

Conclusion

This session underscored that CCUS is **not merely a climate technology** — it is the foundation of the UK's new industrial strategy.

It can secure jobs, attract investment, and anchor economic resilience for generations — but only if ambition is matched by action.

The path forward demands courage, coordination, and conviction.

If the UK holds its nerve, aligns policy with purpose, and moves at speed, CCUS can transform not just industries — but entire regions — into the engines of a cleaner, fairer, globally competitive Britain.

Ambition delivered at pace — that is how the UK will win the race to decarbonise industry.

Panel 8 Overview



From Left to Right: Dr Michaela Kendall, Adelan and UK Hydrogen Champion for Mission Innovation (Moderator); Helen Leadbetter, UK Civil Aviation Authority; Joe Seifert, EET Hydrogen; Luke Sperrin, Digital Catapult; Dr Mike Rendall, AFC Energy; Rob Dale, Beyond2050

Panel 8: Hydrogen Horizons: Catalysing the UK's Clean Energy Revolutio

Session Overview

This panel delved into one of the most transformative and debated themes in the UK's energy transition — the role of hydrogen in achieving net zero.

The discussion brought together experts from across aviation, industrial manufacturing, technology innovation, and policy advocacy to explore how hydrogen can power heavy industry, transport, and energy systems while creating jobs and driving regional regeneration.

The session's core message was clear: hydrogen is not just a fuel — it's an industrial and economic strategy. Success will depend on aligning technology, policy, and investment to scale hydrogen production, strengthen UK supply chains, and ensure the country captures the full value of this emerging global market.

1. Hydrogen's Dual Role — Fuel and Technology

The panel began by challenging the narrative that hydrogen's value lies only in its role as a clean fuel.

It was emphasised that the UK must also seize leadership in **hydrogen technologies** — including fuel cells, electrolysers, and ammonia cracking systems — where innovation can create high-value export opportunities.

Currently, the UK remains a **net importer of hydrogen technologies**, with domestic developers facing barriers to scale. The opportunity, therefore, is not just decarbonisation, but **green industrialisation**: using hydrogen to both power and produce the UK's future energy system.

"Hydrogen represents a dual opportunity — to decarbonise and to reindustrialise the UK."

2. Aviation — A Sector on the Edge of a Hydrogen Breakthrough

The aviation sector is now firmly entering the hydrogen conversation. With government targets requiring domestic flights to reach net zero by 2040 and international aviation by 2050, hydrogen is emerging as a viable alternative to kerosene.

Research programmes across the UK are testing fuel cells, hybrid power systems, and hydrogen combustion engines, with demonstration aircraft under development. Yet the greatest challenge remains availability and cost.

In one recent pilot project, hydrogen costs reached £6,000 for 48 kilograms — unsustainable for commercial operations. The panel underscored that the transition will hinge on affordable, scalable hydrogen supply chains and the integration of aviation into regional hydrogen clusters.

"Hydrogen aviation isn't just about the aircraft — it's about ensuring the infrastructure on the ground is ready to fuel it."

3. Industrial Decarbonisation — Hydrogen at Scale

For industrial clusters such as the North West and Teesside, hydrogen is already becoming a cornerstone of regional net-zero strategies.

Large-scale blue hydrogen plants under development will abate hundreds of thousands of tonnes of CO₂ each year, helping to decarbonise sectors like glass, steel, and chemicals — industries that cannot fully electrify.

Key insights:

- The first 350 MW blue hydrogen plants are targeting operation by 2029.
- Blue hydrogen offers a **cost-effective bridge** to future green hydrogen production.
- Industrial customers especially energy-intensive manufacturers are the **logical** early adopters due to existing fuel-handling infrastructure and proximity to CO₂ storage.

The discussion reflected a maturing perspective: rather than green vs blue, the path forward is "small green, big blue, big green" — start with scalable blue hydrogen to build infrastructure, while nurturing green hydrogen projects for the longer term.

4. Digital Innovation and Supply Chain Development

Digital innovation was highlighted as an accelerator for hydrogen deployment.

The integration of **AI**, **IoT**, **and data platforms** is essential for safely and efficiently transitioning gas networks, tracking emissions, and managing infrastructure.

The panel also emphasised the need to **map and strengthen the hydrogen supply chain**—ensuring sufficient domestic capability in valves, sensors, pipelines, and materials. Building UK capacity across all stages — production, storage, distribution, and utilisation — will not only support resilience but also underpin **technology sovereignty**.

"We can't build a hydrogen economy on imported technologies — the supply chain is the foundation of sovereignty."

5. Innovation Barriers — Accelerating Commercialisation

While the UK excels at early-stage hydrogen R&D, commercialisation remains slow and bureaucratic.

Entrepreneurs and SMEs face significant challenges accessing testbeds and pilot sites, often forcing them to build their own demonstration facilities — increasing costs and slowing progress.

The call to action:

- Simplify the **innovation-to-deployment pathway** for hydrogen startups.
- Create dedicated national hydrogen test centres for real-world trials.
- Establish a "fast-track" regulatory route for low-carbon technologies proven to enhance safety or reduce emissions.

"Innovation is not the problem — deployment is. We must make it easier to move from bench to market."

6. Ammonia Cracking and Carrier Fuels — Unlocking Hydrogen Logistics

Hydrogen's logistical challenges — storage, transport, and distribution — remain among the biggest barriers to adoption.

A strong case was made for **ammonia as a carrier fuel**, enabling hydrogen to be transported in liquid form safely and cost-effectively.

- One ammonia tanker can carry the equivalent of 15 hydrogen trailers.
- Ammonia infrastructure is already widespread, with established safety standards.
- Localised ammonia cracking can provide **on-demand**, **low-cost hydrogen** where pipeline infrastructure is not yet in place.

This approach could drastically reduce costs and accelerate hydrogen access for remote industries and transport hubs.

"We don't have to wait for pipelines — ammonia cracking allows us to make hydrogen where it's needed, today."

7. Clusters and Collaboration — The Engines of the Hydrogen Economy

The panel praised the **cluster model** as the most effective way to scale hydrogen. Bringing together producers, industrial users, and infrastructure providers within defined regions allows shared costs, reduced risks, and coordinated delivery.

However, several barriers were identified:

- Slow decision-making and process complexity have delayed progress.
- Over-competition in bidding rounds has fragmented momentum.
- Innovation entry points remain limited for SMEs seeking to join clusters.

To overcome this, participants called for **faster government approvals**, **clearer timelines**, and **inclusive participation frameworks** to integrate innovators and smaller players into the cluster ecosystem.

"Clusters work — but they need pace, coordination, and access for innovators."

8. Policy and Political Context — Jobs as the Common Ground

While political debate around net zero continues, hydrogen remains one of the few areas of cross-party consensus — largely because it is **synonymous with jobs, skills, and regional growth**.

Hydrogen development underpins both **energy security** and **economic security**. The anticipated **Clean Industry Bonus** and industrial strategy reforms are expected to expand incentives for developers who source equipment domestically — further aligning hydrogen policy with the UK's "make, buy, and sell more in Britain" philosophy.

"Hydrogen is not just about clean energy — it's about rebuilding Britain's industrial base."

9. Transport and Infrastructure — The Next Frontier

Hydrogen's role in transport — especially heavy vehicles, freight, and aviation — remains underdeveloped but full of potential.

Barriers include:

- Lack of hydrogen refuelling infrastructure for fleets and airports.
- **High fuel costs** and limited supply for demonstration projects.
- Regulatory uncertainty around storage, pipeline standards, and safety zones.

Airports, in particular, face high upfront infrastructure costs and need support to **integrate hydrogen safely alongside traditional fuels**. Lessons from shipping and industrial storage sectors were identified as valuable guides for aviation and logistics applications.

"We must build not just hydrogen vehicles, but the ecosystem that fuels them."

10. The Ask — A Coherent Hydrogen Strategy

In closing, the panelists were asked for their single "ask" from the forthcoming UK Hydrogen Strategy. The collective message was one of **urgency and pragmatism**:

- Supply chain support to retain technology developers in the UK.
- Affordable hydrogen for early-stage aviation and demonstration projects.
- Acceleration of transport and storage infrastructure to unlock scale.
- **Recognition of ammonia cracking** in the Low Carbon Hydrogen Standard.
- Consistent policy timelines and transparent decision-making to sustain investor confidence.

The consensus: The UK cannot afford another delay — the strategy must be published on time and deliver certainty for industry, investors, and innovators alike.

11. The Global Picture — Momentum Abroad, Lessons at Home

The final reflections reminded delegates that hydrogen is advancing rapidly worldwide.

Global hydrogen projects now total over \$1.5 trillion, rising by around \$100 billion a month since 2024. The UK, by comparison, risks falling behind.

However, with the right strategy, the nation can still lead — leveraging its world-class research base, established industrial regions, and pioneering demonstration projects.

"Hydrogen is happening — fast. The question is whether the UK chooses to lead or follow."

Conclusion

This session reaffirmed hydrogen's role as **the connective tissue of the net zero transition** — uniting industry, innovation, and infrastructure.

Hydrogen offers not just cleaner energy, but a pathway to economic renewal, energy independence, and technological leadership.

If the UK can move from ambition to acceleration — aligning clusters, funding, and policy under a coherent national vision — it can position itself at the forefront of the global hydrogen economy.

Hydrogen is the fuel of the future — and the foundation of a new industrial Britain.

Panel 9 Overview



From Left to Right: Robert Hines, Arup (Moderator); Chris Gilbert, Decarbonisation Consulting Ltd; Michael Foley, ExxonMobil; Mark Sommerfeld, Carbon Capture and Storage Association (CCSA); Orlando Minervino, Xoserve; Nick Curum, Al Energy Think Tank; Clare Maio, KPMG; Philipp Lukas, Future Biogas

Panel 9: Balancing Act: The Role of Oil and Gas in Achieving the UK's Net Zero Goals Session Overview

This session brought together voices from across the oil and gas, carbon capture, technology, and renewable energy sectors to confront one of the most contentious questions in the energy transition:

What role should oil and gas play in a net-zero future?

The discussion sought to move beyond ideological divides and focus instead on practical realities — energy security, economic resilience, industrial decarbonisation, and the technologies required to achieve meaningful emission reductions.

The prevailing message was one of **pragmatism and integration**: hydrocarbons will remain part of the global energy mix for decades to come, but the way they are produced, processed, and consumed must change radically. Carbon capture, hydrogen, and biomethane emerged as central to bridging the gap between today's energy system and tomorrow's clean economy.

1. Energy Security and Net Zero — Not Opposites, but Partners

The panel opened with a critical question: Can the UK achieve both energy security and net zero?

The consensus was unequivocal — it must, and it can.

The UK currently sources roughly half of its gas domestically and remains a significant oil producer, though much of its crude is exported and replaced by imported refined products.

The challenge, therefore, is not eliminating oil and gas overnight, but **reducing emissions from their extraction and use**, diversifying the energy mix, and reducing demand through efficiency and innovation.

Energy security, the panel agreed, is about **resilience and diversity**, not dependence on one source. Renewables, nuclear, and hydrogen will expand, but hydrocarbons with **carbon capture and storage (CCS)** will remain vital for stability, dispatchable power, and essential industrial processes — from fertilizer production to pharmaceuticals and plastics.

"It's not about fossil fuels versus renewables — it's about creating a balanced, secure, and decarbonised energy system."

2. The Ongoing Role of Hydrocarbons

The discussion turned to the unavoidable reality that hydrocarbons underpin modern life far beyond power generation.

Over **6,000 products**, from medical equipment to mobile phones and even electric vehicles, are derived from petroleum-based materials. Hydrocarbons are embedded in **the fabric of global manufacturing and medicine** — from PPE and ventilators to EV components and graphite batteries.

Even in a net-zero world, hydrocarbons will persist in non-combustion applications. The challenge, therefore, is **not elimination**, **but transformation**: capturing, storing, and managing the carbon produced across the full lifecycle of extraction and use.

"Hydrocarbons are not the enemy — emissions are."

3. Carbon Capture, Utilisation and Storage (CCUS) — Bridge, Not Excuse

CCUS was positioned as a critical enabler of decarbonisation, not a license to prolong pollution.

The technology provides dispatchable low-carbon power, reduces industrial emissions, and supports hard-to-abate sectors such as steel, cement, and chemicals. The UK's Committee on Climate Change projects that CCUS will account for a significant portion of total greenhouse gas removals by 2050.

While critics frame CCUS as greenwashing, panellists argued that it is essential for an orderly transition — particularly in industries where alternatives are not yet scalable. The focus must now shift from advocacy to **accountability and transparency**: ensuring captured carbon is verified, stored safely, and reported accurately.

"The risk isn't in the technology — it's in how it's governed. With proper oversight, CCUS can buy us the time we need to decarbonise at scale."

4. The Oil and Gas Sector's Reinvention

A key theme was the **repositioning of oil and gas companies as energy transition enablers**. For many, carbon capture and hydrogen represent areas where they can deploy decades of technical expertise in geology, subsurface management, and large-scale industrial delivery.

Unlike renewables — where utilities already dominate — CCUS and hydrogen align closely with the traditional strengths of oil and gas firms:

- Subsurface interpretation and reservoir engineering
- Major project management
- Molecule handling and industrial-scale logistics

This alignment explains why many producers are now **pivoting from extraction to abatement**, investing heavily in CCS infrastructure and low-carbon fuels. The shift is not just strategic but existential: maintaining profitability while meeting shareholder expectations and decarbonisation mandates.

"Oil and gas companies are not just producers of hydrocarbons — they're custodians of the subsurface. That's a competitive advantage in the carbon era."

5. The Just Transition — Protecting Communities and Skills

The panel confronted the social dimension of net zero — ensuring that industrial decarbonisation does not repeat the mistakes of the coal decline.

With hundreds of jobs being lost in oil and gas every fortnight, the risk of community collapse is real. The government's "Clean Power Army" initiative promises new green jobs, but these roles are not yet materialising at the scale or pace required.

Key concerns included:

- The **timing mismatch** between job losses and emerging industries.
- The absence of clear retraining pathways and salary guarantees.
- The danger of skilled workers leaving the UK for more secure employment abroad.

Participants urged government and industry to create **definitive roadmaps** linking project pipelines to workforce transition — ensuring training leads directly to employment. Localised storytelling and case studies were also encouraged to humanise the transition and build trust in its economic benefits.

"We can't talk about thousands of green jobs in theory — people need to see them in their communities."

6. Investment Confidence — Complexity vs. Certainty

Despite the UK's strong policy frameworks, **investor confidence in CCUS remains fragile**. Complex contracts, lengthy approval processes, and political inconsistency have slowed progress, especially when compared to the United States' **Inflation Reduction Act (IRA)**, which offers simple, immediate incentives through tax credits like 45Q.

While the UK's Contract for Difference (CfD) and Regulated Asset Base (RAB) models provide sophistication and stability, they are too complex for international investors unfamiliar with the UK's regulatory culture.

"Industry is ready to invest — what's missing is delivery certainty."

To compete globally, the UK must streamline processes, accelerate decision-making, and ensure policy durability beyond election cycles. A stable investment climate is as critical as technical innovation.

7. Biomethane and Circular Carbon Solutions

The panel broadened the conversation to biomethane and biogenic CO₂, highlighting their overlooked potential in the decarbonisation mix.

Biomethane could supply up to half of the UK's gas network by 2050, while generating millions of tonnes of biogenic CO₂ suitable for sequestration or conversion into synthetic fuels (SAF).

This "circular carbon" model — where waste becomes resource — exemplifies the pragmatic innovation needed for a balanced transition.

"Every molecule of biogenic CO₂ we capture is one less we emit — and one step closer to a circular carbon economy."

8. Learning from Global Leaders — Adapting, Not Copying

When asked what the UK could learn from abroad, the panel cautioned against imitation. While the US and Asia benefit from scale and direct subsidies, the UK's advantages lie in:

- World-leading North Sea geology for carbon storage.
- Established offshore infrastructure and supply chains.
- Policy expertise and regulatory leadership in CCUS and low-carbon finance.

Instead of replicating enhanced oil recovery (EOR) models used in the US, the UK should **build on its strengths** in subsurface storage, offshore engineering, and governance. From Scandinavia, the lesson is clear: *focus on delivery, not design*.

"We may over-engineer — but we also build complete systems. No one else has developed the full CCUS value chain like the UK has."

9. Fiscal Policy and the Energy Profits Levy

The final discussion addressed the UK's **Energy Profits Levy (EPL)** — the so-called windfall tax.

While introduced during the energy crisis to offset consumer bill increases, panellists described its long-term impact as **damaging to investment confidence**.

By undermining trust in the fiscal regime, the levy has discouraged capital expenditure and prompted some global firms to scale back UK operations in favour of more stable markets such as the US and Canada.

The panel acknowledged the political rationale but urged reform:

- Future levies should be time-limited and accompanied by clear reinvestment pathways.
- Industry must demonstrate how investment in CCUS and low-carbon projects will directly reduce consumer costs to rebuild public and political support.

"If we can't link investment to lower bills, we can't win the argument to remove barriers like the EPL."

10. The Road Ahead — Pragmatism, Pace, and People

In closing, the panel offered a set of unifying priorities to guide the UK's energy transition:

- 1. **Balance** Recognise hydrocarbons' ongoing role while accelerating decarbonisation technologies.
- 2. **Pace** Streamline policy, reduce bureaucracy, and focus on delivery.
- 3. **Partnerships** Strengthen collaboration between government, industry, and local communities.
- 4. **People** Prioritise skills, fairness, and workforce mobility.
- 5. **Pragmatism** Leverage UK strengths North Sea assets, regulatory leadership, and engineering excellence.

"The UK's journey to net zero won't succeed through ideology or delay. It will succeed through clarity, collaboration, and courage."

Conclusion

The session concluded with a powerful reminder: oil and gas are not the past — they are part of the pathway.

If managed responsibly, the sector can deliver the infrastructure, innovation, and investment required for a just and secure energy transition.

The challenge for policymakers is to maintain trust, stability, and vision — transforming legacy industries into the foundation of a cleaner, more resilient, and globally competitive energy future.

"This is not about ending oil and gas — it's about ending emissions."

Panel 10 Overview



From Left to Right: Leo Rayman, EdenLab; Kit Fitton, Octopus Energy; Sarah Honan, ADE: Demand; Jeremy Yapp, Joulen;

Joe Dutton, AXIS (Moderator)

Panel 10: Integrating Energy Systems for the UK's Net Zero Future

Session Overview

This panel of the conference explored the crucial theme of **energy system integration** — the convergence of electricity, heat, transport, and digital technologies into a more flexible, efficient, and consumer-driven system.

As the UK accelerates its transition to net zero, electrification and demand flexibility are emerging as the defining challenges of the next decade. The discussion addressed the balance between infrastructure and behaviour, technology and affordability, and the pivotal role of the consumer in shaping the new energy economy.

The central message was clear:

System integration is not just a technical challenge — it's a societal transformation.

The transition must be intuitive, equitable, and built around consumer trust, not just policy ambition.

1. The Electrification Imperative

The conversation opened by acknowledging that global electrification rates — currently hovering between 20–25% — must rise dramatically if climate goals are to be met.

Electrification is no longer just a question of supply (renewables replacing fossil generation) but increasingly one of **demand transformation**: how homes, vehicles, and industries consume, store, and share electricity efficiently.

The panel noted key milestones:

- Decades of energy efficiency have reduced UK demand overall.
- The next frontier lies in **electrifying heat and transport**, sectors still heavily dependent on fossil fuels.
- As transport, heating, and industrial processes shift to electricity, every household's energy bill effectively becomes its **single source of energy truth** encompassing power, mobility, and comfort.

This convergence makes the affordability, transparency, and design of that "one line item" — the energy bill — central to the politics and social legitimacy of net zero.

"Tomorrow's energy bill isn't just about lights and appliances — it's your heat, your mobility, your home comfort, and your contribution to net zero all in one."

2. Consumer-Led Flexibility — From Concept to Reality

A major theme was **consumer-led flexibility** — the ability for households and businesses to adjust energy use in response to price signals, grid needs, or renewable availability.

While policy frameworks highlight flexibility as vital to grid stability, the panel stressed that most consumers have no awareness of what it means or why it matters.

This "engagement gap" must be closed not through abstract education campaigns, but by **making flexibility desirable and effortless** — mirroring the success of technologies like streaming or smartphones, which spread without public instruction because they were simply better.

The takeaway:

- The energy industry must focus less on preaching and more on **building products** people actually want.
- Success will come when flexibility is **unconscious** embedded in technology and experience, not dependent on consumer effort.

"No one ran a government campaign to replace VHS with DVDs. It just worked better. That's how this transition needs to feel."

3. The Role of Behaviour and Trust

The panel explored the tension between **consumer-led** and **consumer-being-led** transitions. The goal is not to force households into complex energy behaviours but to design systems that adapt around people's existing routines.

For example:

- Electric vehicles (EVs) can automatically charge when renewable power is abundant and prices are low.
- Smart heat pumps can preheat homes ahead of peak hours without sacrificing comfort.
- Household batteries can smooth demand profiles without requiring active user decisions.

The message was clear:

Consumers should experience better service, lower costs, and the same comfort — but powered differently.

However, cultural and informational barriers persist.

Misinformation around EV safety, heat pump performance, and "energy rationing" narratives continues to slow adoption. The panel emphasised that this is not a technological challenge but a **communications and trust deficit**.

"People don't reject clean energy because they oppose climate action — they reject it because they don't trust it will work for them."

4. Affordability and the Cost Barrier

Electrification remains constrained by the **upfront cost of technology** — EVs, solar panels, batteries, and heat pumps remain unaffordable for many households.

While operating costs are often lower, **high installation costs** deter adoption. The panel discussed practical solutions:

- Subscription and finance models that spread costs over time.
- Low-interest government-backed loans, similar to past "Green Deal" initiatives but with simpler, faster delivery.
- Scale and standardisation, which will gradually drive down prices through mass manufacturing.

The discussion also noted the "trickle-down" dynamic of early adoption: wealthier households adopting first indirectly **reduce system-wide costs** by increasing flexibility, which in turn lowers prices for everyone through avoided curtailment, reduced gas peaking, and deferred infrastructure upgrades.

"A more flexible energy system is cheaper for all — but it starts with making adoption affordable for some."

5. The Regulation and Market Access Challenge

While regulation is often cited as a barrier to innovation, the panel clarified that the problem is not **over-regulation** but **misaligned regulation**.

Flexibility service providers — companies that aggregate and manage distributed assets such as EV chargers and home batteries — currently lack a clear market framework.

Challenges include:

- Slow and complex market entry requirements.
- Metering rules designed for gas plants, not smart homes.
- Grid access and balancing mechanisms that remain dominated by large incumbents.

The result: smaller innovators struggle to scale, despite offering cleaner and cheaper solutions.

"We're not asking for subsidies — we're asking for a level playing field. Regulation must reflect the assets we have, not the system we had."

The panel urged regulators to focus on **market access and proportionality** — ensuring new entrants can participate under fair, transparent, and realistic conditions.

6. Vehicle-to-Grid (V2G) and the Power of Mobility Integration

Vehicle-to-grid (V2G) technology — where electric vehicles feed energy back into homes or the grid — was discussed as a major untapped opportunity.

With 40 million vehicles in the UK, even modest participation could add 7 GW of flexible capacity to the system.

Manufacturers are beginning to recognise the **commercial advantage** of V2G-enabled models, with China leading in mass deployment.

Key insights:

- V2X (Vehicle-to-Everything) including vehicle-to-home and vehicle-to-appliance may prove more practical than direct grid export.
- Car brands are often **more trusted and aspirational** than energy brands, creating a powerful entry point for mass consumer adoption.
- Integration of EVs into household energy systems could **transform cars into mobile batteries**, enhancing resilience and cutting bills.

"People love their car brands more than their energy suppliers — that's how V2X will go mainstream."

7. Technology as the Invisible Enabler

One of the session's most striking ideas was the "unconscious transition" — a shift in which consumers benefit from decarbonisation without needing to understand it.

Smart systems, automated pricing, and embedded storage can make participation seamless. A battery in every home, for instance, could optimise consumption automatically — allowing consumers to live exactly as they do today, but with dramatically lower bills and emissions.

The future of system integration lies not in forcing behavioural change but in **abstracting complexity away** — through design, automation, and trust in digital infrastructure.

8. Education, Motivation, and Equity

When asked how public engagement could accelerate, the panelists agreed:

Price is the greatest educator.

When consumers see clear, consistent cost savings — not just environmental virtue — adoption accelerates.

However, education must also connect with **human motivations** beyond price: independence, comfort, self-reliance, and cleaner air.

For lower-income households, flexibility can also mean **energy dignity** — pre-heating homes at off-peak times or accessing affordable warmth for the first time.

"Flexibility isn't just shifting energy use — it's shifting lives. It's the difference between heating your home and not heating it."

9. The Path Forward — From Integration to Empowerment

The session closed with a call to action:

System integration must move from policy ambition to everyday reality through a combination of **technology**, **fairness**, **and design thinking**.

Key priorities identified:

- 1. **Accelerate regulatory reform** to open flexibility markets to all scales of participation.
- 2. **Simplify consumer experiences** so that clean energy becomes effortless.
- 3. Unlock finance and affordability mechanisms to enable broad access.
- 4. **Tell better stories** shifting the narrative from sacrifice to empowerment.

5. **Scale flexibility** to reduce costs, increase resilience, and build public trust in the transition.

"People won't adopt net zero because it's the right thing to do — they'll adopt it because it makes life better."

Conclusion

This panel reinforced a central theme of the conference:

The energy transition is no longer just about supply, but about **integration**, **intelligence**, **and inclusion**.

If designed well, the future energy system can be **invisible**, **affordable**, **and empowering** — where homes, vehicles, and businesses quietly collaborate to balance the grid and cut emissions.

The challenge is not whether technology can deliver, but whether the industry, government, and regulators can build trust, simplify participation, and deliver value fast enough.

"A truly integrated energy system is one where consumers don't have to think about energy — because it simply works for them."

Panel 11 Overview



From Left to Right: Jeptha Allen, Access Information Advisory; Wafa Jafri, KPMG; Mike Cork, Howden; Derreck van Gelderen, PA Consulting (Moderator)

Panel 11: Data Centers and AI – Balancing Innovation with Sustainability

Session Overview

In this forward-looking session, industry leaders explored the accelerating convergence of **Artificial Intelligence (AI)**, **data centers**, and **energy infrastructure**, and the implications for the UK's journey toward a digital and net-zero economy.

As AI adoption grows exponentially, data centers — the physical backbone of the digital world — are emerging as one of the fastest-growing sources of electricity demand. The discussion examined the dual nature of this transformation: data centers as both enablers of digital innovation and significant energy consumers.

The panel's central message was unambiguous:

AI and data infrastructure are here to stay — but they must evolve sustainably, strategically, and systemically.

Integration, education, and collaboration between energy, technology, and policy sectors will be essential to manage this new wave of digital-industrial growth.

1. AI and the Data Center Revolution

The session opened by recognising that the global conversation around AI cannot be separated from the expansion of data centers.

AI models, from generative tools to predictive analytics, require vast computing power — and every interaction, from mobile use to cloud storage, routes through these digital "powerhouses."

Key insights included:

- The AI revolution is driving unprecedented data demand, with electricity consumption projected to rise from 2 GW to 7 GW in the UK by 2035.
- Data center vacancy rates in Europe are below 5%, reflecting extreme pressure on capacity.
- Investment appetite is surging, with major funds viewing data centers as "blue-chip infrastructure" assets.

However, the panel cautioned that **supply chain constraints**, **grid connection delays**, and **rising power density** could slow deployment. The challenge is no longer whether AI-driven growth will happen — it's **how to power and regulate it responsibly**.

"Every swipe, search, and stream touches a data center. The question now is whether our infrastructure — and our mindset — can keep up."

2. Integration Across Energy and Digital Systems

The discussion linked seamlessly to the preceding conference themes on **energy system** integration.

Panelists emphasised that energy and data are now inseparable: AI and data centers both drive and depend on the same underlying networks of electricity, storage, and connectivity.

Key takeaway: **Integration must happen across sectors** — from power generation and transmission to computing and cooling.

Data centers are no longer passive consumers but **potential active participants** in the grid — capable of providing flexibility, storage, and even surplus heat to local communities.

"We must stop thinking of data centers as energy drains and start seeing them as part of the system — as power assets in their own right."

3. The Growth Landscape — Hyperscale, Colocation, and Edge

The panel explored the three primary growth segments in the data center ecosystem:

- 1. **Hyperscalers** (global platforms such as cloud and AI infrastructure operators) driving demand through massive language models and enterprise AI services.
- 2. Colocation Data Centers increasingly being retrofitted to host AI compute alongside traditional workloads, reducing latency and maximising existing infrastructure.
- 3. **Edge Data Centers** smaller, decentralised facilities located near users and devices to enable **real-time processing** for applications such as driverless cars, smart cities, and digital surveillance.

While hyperscalers currently dominate investment, **colocation retrofits** and **edge deployments** represent the next wave of opportunity — especially in markets where latency and power constraints limit hyperscale expansion.

"AI will not only live in the cloud — it will live on the edge, where responsiveness and proximity to users matter most."

4. Retrofitting and Infrastructure Modernisation

Retrofitting emerged as a practical solution to bridge the capacity gap. Existing data centers, though not originally designed for high-density AI computing, can be upgraded with:

- Reinforced flooring for heavier racks and cooling systems.
- Closed-loop water cooling to manage heat efficiently.
- Upgraded cabling, power distribution, and structural reinforcement.

However, these adaptations are capital-intensive and require careful design. The upside is that existing sites already have **connectivity**, **clients**, **and permits**, enabling faster deployment than entirely new builds.

5. Investor Confidence and Capital Dynamics

Investor appetite for data infrastructure is surging. Pension funds, private equity, and institutional investors are increasingly viewing data centers as **core sustainable infrastructure**, similar to renewables or transport assets.

Yet investor caution remains, centred on:

- **Grid access and power availability** particularly in Germany, the UK, and the Nordics.
- Planning uncertainty and local opposition ("Not In My Backyard" sentiment).
- Bankability and return on investment, given evolving energy costs and regulation.

A new trend is emerging: co-located energy and data projects.

Partnerships between utilities, investors, and developers are creating **vertically integrated sites** — where onsite renewable generation or small-scale nuclear is directly linked to data operations.

This model improves sustainability, de-risks energy procurement, and provides a stable investment proposition.

"The capital is there. What's missing is certainty — in policy, in planning, and in power."

6. Climate Resilience and Environmental Risk

The panel highlighted the growing focus on **climate-related risks** to digital infrastructure:

- Flooding and drought pose physical and operational challenges.
- Water use for cooling remains a reputational and sustainability concern.
- Rising temperatures could affect both uptime and maintenance access.

The shift toward **closed-loop cooling** systems is reducing water dependence, and innovative approaches such as **heat recovery** are turning waste into opportunity. It was noted that **up to 10% of Europe's heat demand** could be met by excess heat from data centers — underscoring their potential contribution to circular energy systems.

"Data centers can become part of the sustainability solution — not just part of the problem."

7. Energy Mix and Reliability

Sustainability cannot come at the cost of reliability.

Data centers require near-perfect uptime — known as the "five nines" standard (99.999% availability, equivalent to less than three minutes of downtime per year).

To meet this, panelists agreed that the UK's data center energy mix must be diverse and resilient, combining:

- Nuclear and Small Modular Reactors (SMRs) for constant baseload.
- **Renewables** wind, solar, and hydrogen complemented by battery storage.
- Gas with carbon capture (CCUS) as a transitional bridge.

Looking ahead, co-locating **SMRs or virtual power plants** alongside large data centers could offer unprecedented self-sufficiency, while integrating **grid-responsive flexibility** (e.g., spinning down non-critical workloads during peak demand) will enhance resilience.

"Imagine a data center that doesn't just consume power — it produces, stores, and manages it. That's where we need to get to."

8. Regulation, Skills, and Delivery Certainty

Policy and planning frameworks must evolve to match the speed of technological change. The UK has strong strategies on paper — but execution lags behind.

Key actions identified:

- Planning reform to fast-track pre-zoned data center sites, particularly on **brownfield** land with existing grid connections.
- **Skills development** to ensure an available, mobile, and technically trained workforce for complex builds.
- Stable fiscal and regulatory regimes to maintain investor confidence avoiding sudden taxation changes or policy reversals.

"We don't lack vision — we lack velocity. The plans exist. We just need to get them done."

9. Public Perception and Community Engagement

The conversation turned to community trust and social acceptance.

Public resistance to data centers, nuclear projects, or large infrastructure stems from fear, misinformation, and limited perceived benefit.

The solution lies in **education and community incentives**:

- Communicating tangible benefits such as jobs, subsidised power, free heat, and improved connectivity.
- Demonstrating how digital infrastructure can revitalise local economies.
- Moving from "not in my backyard" to "our shared infrastructure."

"If people see what's in it for them — cheaper power, better heat, local jobs — they'll welcome the future instead of fearing it."

10. Insurance, Risk, and Systemic Complexity

The panel concluded by examining the **interconnected risks** across the AI-data-energy ecosystem.

Insurers face new challenges assessing systemic interdependencies — where failure at one data center can cascade across multiple facilities and services.

Innovative solutions include:

- Technology performance insurance, transferring risk from investors to the insurance market.
- Unified design and safety standards for data centers.
- Shared risk pools and data frameworks to improve pricing accuracy and resilience.

These instruments can significantly lower the **cost of capital** for new infrastructure — accelerating innovation without amplifying financial exposure.

11. Governance, Planning, and Equity

A thought-provoking audience question raised the issue of **spatial planning and equity** — how data center developments can coexist with industrial clusters such as hydrogen hubs or manufacturing corridors.

Panelists called for a **pre-zonal approach**, identifying suitable sites across the UK — particularly **brownfield**, **previously industrial areas** — to streamline planning and prevent conflicts with existing industries.

This proactive model could accelerate approvals, reduce community tension, and align national digital infrastructure with regional economic priorities.

Conclusion

The discussion concluded on a note of both urgency and optimism.

AI and data infrastructure are transforming every sector of the economy — from manufacturing to mobility, from healthcare to housing. The question is not whether this transformation will continue, but whether the UK can power it sustainably, competitively, and inclusively.

The pathway forward lies in:

- **Integration** bridging energy, digital, and industrial systems.
- Education building understanding and trust.
- **Diversification** ensuring flexibility in power and policy.
- **Collaboration** aligning government, investors, and communities.

"AI and data centers will define the next industrial revolution. The UK must ensure that this revolution is powered cleanly, governed wisely, and shared fairly."

Panel 12 Overview



From Left to Right: Dr Elina Militello Asp, UK Atomic Energy Authority (Moderator); Itxaso Ariza, Tokamak Energy; Martin Soltau, Space Solar; Rosemary Wildblood, Decision Analysis Services (DAS); Dr Hugo Doyle, First Light Fusion

Panel 12: Future Energy Sources: Pioneering Technologies to Achieve Net Zero

Session Overview

The closing panel of the conference, "Future Energy Sources: Beyond Net Zero," examined the bold frontier of clean energy innovation — exploring technologies that could redefine global energy systems in the second half of the 21st century.

The discussion spanned fusion power, space-based solar energy, high-temperature superconductors, and critical mineral strategies — converging on one shared ambition: a carbon-free, sustainable, and prosperous energy future.

Panelists agreed that the world cannot rely solely on today's renewables to meet surging energy demand, particularly as AI, electrification, and data-driven industries accelerate consumption. The challenge now is not simply to decarbonise — but to **create abundant**, **resilient**, and **economically transformative sources of clean energy** for the generations to come.

1. The Energy Horizon — Why Future Sources Matter

The session began by challenging the audience to look beyond net zero toward a truly **carbon-free global economy**.

While the world continues to expand renewable deployment, experts warned that existing low-density technologies like wind and solar — though vital — cannot alone support the scale of growth expected in energy demand. Global projections suggest a fourfold increase in energy

consumption by 2050, driven primarily by AI, data centers, electrified transport, and population growth.

The panel agreed that **high-density**, **continuous**, **and scalable** clean energy sources such as **fusion and space-based solar power** are essential to fill that gap.

"Renewables will decarbonise our present — but future energy technologies will define our prosperity."

2. Fusion Energy — From Physics to Engineering Reality

Fusion was described as one of the **most transformative long-term bets** in the global clean energy race.

Recent breakthroughs — notably the achievement of "energy gain" in inertial fusion experiments — have accelerated global momentum, with more than \$11 billion in private investment now driving innovation alongside government programs.

Key takeaways:

- Fusion offers **abundant**, **safe**, **and clean power**, with no long-lived radioactive waste and virtually limitless fuel derived from water.
- The UK's **STEP programme** is leading the national charge, aiming to demonstrate **net electricity generation by the 2040s** and establish a commercial pathway for fusion power plants.
- Fusion's ecosystem has already begun creating thousands of jobs across construction, engineering, and high-tech supply chains, particularly in regions such as **Nottinghamshire's West Burton**, where STEP will be based.

Participants noted that the value of fusion extends far beyond its final energy output. Its enabling technologies — **high-temperature superconductors (HTS)**, **magnetic systems**, **diagnostics**, and **power transmission innovations** — are already driving commercial applications across sectors from aerospace to data infrastructure.

"Even if fusion takes decades, the technologies it creates are transforming industries today."

3. Space-Based Solar Power — Energy from Orbit

Space-based solar power (SBSP) — once dismissed as science fiction — has rapidly advanced toward commercial viability.

This technology involves orbiting satellites that collect continuous sunlight, convert it into radio-frequency (RF) energy, and beam it safely to receivers on Earth. Unlike terrestrial solar, SBSP provides 24/7 dispatchable, weather-independent, and location-flexible clean power.

Recent progress:

- Falling launch costs, driven by reusable rockets, have made SBSP **technically and economically viable**.
- Studies commissioned by the UK government in 2020 concluded it could deliver **gigawatt-scale power** well within net zero timelines.
- Modular satellite design and phased-array technology make it scalable and resilient, enabling potential costs to fall below £30/MWh by 2040 cheaper than current offshore wind once balancing costs are considered.

SBSP's capacity to deliver **continuous**, **exportable power** without transmission constraints also makes it ideal for supporting **data centers**, **islands**, **and developing nations** with limited grid access.

"Space-based solar can power the world — day and night, anywhere on Earth."

4. Critical Minerals — The Hidden Foundation of the Energy Transition

Amid visions of futuristic technologies, the panel grounded the conversation with a sobering reality: no clean energy future is possible without critical materials.

The UK currently depends heavily on imports for 34 key minerals — including **graphite**, **lithium**, **nickel**, **and copper** — all of which are essential for renewables, batteries, and advanced energy systems.

Experts warned of escalating risks:

- China dominates global refining for **29 of the top 41 critical minerals**.
- Refining, not mining, is the **true bottleneck**, and the UK must invest domestically in processing and recycling to ensure supply resilience.
- The **next decade** (2030–2040) will see peak demand for copper and other conductors, outstripping global supply.

Emerging technologies such as **high-temperature superconductors** (HTS) could help alleviate these pressures by dramatically reducing material requirements for energy transmission — offering **million-fold efficiency gains** compared to conventional copper.

The call to action: develop a **UK critical minerals and materials strategy** focused on circularity, recycling, and sustainable sourcing to underpin future energy industries.

"Energy security is mineral security. The race to net zero will be won by those who can mine, refine, and recycle sustainably."

5. Skills, Supply Chains, and Economic Regeneration

Beyond technology, the discussion underscored the **human dimension** of the future energy revolution.

Fusion and SBSP are not just science projects — they are **industrial strategies** capable of reviving regional economies, creating high-value jobs, and inspiring a new generation of engineers.

- The STEP fusion site alone is expected to generate 3,000 construction jobs and 6,500 permanent operational roles, revitalising communities previously dependent on fossil industries.
- Both sectors are proving magnets for **STEM talent**, attracting thousands of applicants even before full recruitment begins.
- The technologies' cross-disciplinary nature spanning physics, AI, semiconductors, robotics, materials science, and manufacturing offers a once-in-a-generation opportunity to rebuild UK manufacturing capability.

Participants called for **regional collaboration** between industry, government, and education providers to ensure a joined-up skills pipeline that prepares the workforce for 2050 and beyond.

"These are the moonshots that will bring purpose, pride, and prosperity back to British engineering."

6. Geopolitics, Competition, and Collaboration

The conversation shifted to global competition and cooperation.

While the UK is currently at the forefront of both fusion and SBSP innovation, maintaining leadership will require speed, investment, and strategic autonomy.

Key reflections:

- The UK must avoid repeating the post-1950s nuclear decline, where early leadership was lost due to underinvestment and regulatory inertia.
- International partnerships especially with the US, Japan, and Europe are vital for scaling technology, sharing risk, and aligning standards.
- However, **bureaucracy and rigid public procurement** remain barriers. The UK must empower private-public fusion entities with **commercial agility** and **decision-making freedom** to compete globally.

"Leadership requires courage to back winners, not just fund research. The UK must move from strategy to execution — fast."

7. The Materials and Systems Perspective

The panel reinforced the importance of **systems thinking** in energy planning — recognising that each technology interacts with others in the overall mix. For instance:

- Introducing space solar power into the UK's grid model could **reduce the need for threefold grid expansion**, lowering copper demand and transmission costs.
- Fusion's technological spin-offs such as superconductors and advanced magnets could transform multiple industries, from aerospace to data infrastructure.

This integrated perspective positions future energy sources not as competitors but as **complements** in a balanced, multi-technology ecosystem.

"We must stop talking about technologies in silos — the future is integrated, interoperable, and circular."

8. Financing and the 'Valley of Death'

A major obstacle identified was the **commercialisation gap** — the "valley of death" between successful demonstration and large-scale deployment.

Solutions discussed:

- Public-private financing models that align research, capital, and market demand.
- Using **existing mechanisms** such as Contracts for Difference (CfD) for early commercial plants.
- Diversification strategies e.g. fusion companies applying their technologies to defence and data sectors to build near-term revenue and investor confidence.

Panelists emphasised that capital is available, but investors need clarity on business models, risk-sharing, and government backing.

"It's not the money that's missing — it's the certainty. Investors back clear pathways, not perpetual pilots."

9. AI, Data Centers, and Energy Convergence

In a fitting close to the conference, the discussion circled back to the interplay between **AI** and energy.

AI will both drive energy demand and accelerate innovation in clean energy systems.

Fusion and SBSP, with their potential for **continuous**, **high-density power**, could directly support AI's exponential computational needs. Conversely, AI will help optimise these energy systems — from plasma control in fusion to predictive maintenance in space infrastructure.

This symbiotic relationship was seen as a defining characteristic of the next industrial revolution — one where energy and intelligence evolve together.

"AI needs clean energy to grow — and clean energy needs AI to succeed."

10. Conclusion — Betting on the Future

The panel concluded with a unifying message: the future will not be powered by a single technology, but by a portfolio of bold innovations.

Fusion and space-based solar power represent **transformational long-term investments**. Their benefits — from technological spillovers to job creation and regional regeneration — justify the commitment, even if commercial milestones take decades.

To lead this new frontier, the UK must combine **vision**, **velocity**, **and collaboration**, ensuring that its early leadership translates into enduring global influence.

"We can't afford to bet small. The real risk isn't backing the wrong technology — it's failing to back the future at all."

ELUK2025

Testimonials & Socials

Women in Nuclear UK shared powerful insights from their time at ELUK2025, spotlighting nuclear innovation, skills, diversity and collaboration in driving the UK's net-zero future.

Free Read their full reflections and join the conversation here

A brilliant reflection by **Simon Richardson, Energy Coast UTC** on speaking at ELUK2025 about the future energy workforce, industry-education collaboration, and inspiring the next generation of talent.

Fread the full post and join the conversation here

A thought-provoking reflection from **Jeptha Allen**, **Access Information Advisory**, on insights from ELUK2025 — exploring how the UK can turn grid constraints, planning challenges and rising AI demand into a competitive advantage, building smarter and sustainable sovereign AI infrastructure.

Fread the full post and join the debate here

A great recap from **Joe Dutton**, **AXIS**, on insights from ELUK2025 — highlighting the role of insurance in the energy transition, the importance of public trust in net zero, and why investing in resilient energy infrastructure remains essential for the UK's future.

Fread Joe's full reflections here

A great reflection from **Euan Killengray**, **LCP Delta**, on stepping outside the usual flexibility and storage conversations at ELUK2025 — exploring industrial decarbonisation, data centre integration, and future energy technologies like space solar and fusion.

Fread the full insights here

A brilliant set of insights from **Dr Elina Militello Asp, UK Atomic Energy Authority**, across two powerful days at ELUK2025 — highlighting the urgency of grid and energy

system investment, inspiring the next generation of energy talent, and the long-term promise of fusion and space-based solar in delivering abundant, sustainable power.

- Fread the Day 1 post here
- Fread the Day 2 reflection here

A great summary from **Deepika Banerjee Sahai, Dowds**, capturing two days of insight at ELUK2025 — from the politics of net zero and grid investment challenges to breakthrough technologies like SMRs, CCS, AI-enabled energy systems, fusion and space-based solar.

Explore the full takeaways here

A powerful reflection from **Electrify Britain** on speaking at ELUK2025, emphasising why the UK's next phase of the energy transition must prioritise affordability, policy alignment and real-world delivery to make clean power cheaper and scale electrification for all.

Fread the full post here

A wonderful post from **Sarah Mintey MBE**, **Developing Experts**, celebrating 10 years of inspiring young people into STEM careers and marking the milestone at ELUK2025 — alongside news of winning a National AI Award in Education and continuing to expand innovative, career-linked learning.

Fread Sarah's full story and join the conversation here

A great reflection from **Leah Khalilova**, **Nobel Upstream**, on insights from ELUK2025 — emphasising the need for policy consistency, grid reform, trusted data, digital innovation and skills investment to turn the UK's net-zero ambition into delivery.

👉 Read Leah's full post <u>here</u>

A strong update from **VPI** reflecting on a big week for CCS — including joining ELUK2025 to discuss how the UK can accelerate carbon capture deployment, protect jobs and build new industrial opportunities as we move from ambition to delivery.

👉 Read the full post <u>here</u>

A thoughtful reflection from **Eva Hallas**, **Taylor Woodrow**, on key themes from ELUK2025 — from investor certainty and grid reform to the rising role of AI, data centres, hydrogen and SMRs in delivering the UK's net-zero ambitions.

Fread Eva's full post here

A strong contribution from **Trevor Hutchings**, **REA**, reflecting on a serious and timely debate at ELUK2025 — emphasising the UK's progress, global leadership, public support for renewables and the need for policy stability, consumer-first energy reform and community benefits to keep net zero on track.

Fread Trevor's full post here

A great update from **Greg Beach**, **V360XR**, reflecting on exhibiting and speaking at ELUK2025 — showcasing how immersive XR technology is transforming training, safety and operations in high-risk industries, while joining dynamic debates shaping the UK's energy future.

/ Read Greg's full post here

A fantastic reflection from **Orlando Minervino**, **Xoserve**, on an insightful ELUK2025 panel exploring the role of oil and gas in the net-zero transition — highlighting the critical importance of trusted data in enabling CCUS, hydrogen, biomethane and a practical, accountable path from ambition to delivery.

Fread Orlando's full post here

A sharp set of insights from **Nick Curum**, **AI Energy Think Tank**, breaking down both days of ELUK2025 — from the shift from targets to delivery, to the role of AI in accelerating decarbonisation, CCUS, and firm power.

👉 Read Nick's takeaways from Day 1 here

/ And his insights from Day 2 here

A strong reflection from **Mark Parry**, **LRQA**, on two energising days at ELUK2025 — highlighting expert debate across the energy system, confidence in the UK's capabilities, and

the need for grid upgrades and long-term political commitment to secure investment and realise net-zero goals.

Fread Mark's full post here

A great reflection from **Thomas Canfield**, **eviFile**, on attending ELUK2025 — highlighting open, incisive discussions on accelerating sustainable energy delivery, overcoming grid and planning barriers, and the need for deep cross-industry collaboration.

Fread Thomas's full post here

A great update from **EUA Utility Networks**, with Peter Day and Adrian Waddelove attending ELUK2025 — joining industry and policy leaders to accelerate public-private collaboration, future skills and technologies that will deliver the UK's next phase of the netzero transition.

Fread the full post here

A great post from **Xlinks**, highlighting CEO Simon Morrish's participation at ELUK2025 — discussing how diversified supply and cutting-edge technologies can deliver affordable, secure and flexible power systems for the future.

Fread the full post here

A great update from **Tom Moon**, **Solarport**, after attending ELUK2025 — highlighting valuable discussions on renewables, AI-driven energy demand, data centres, grid infrastructure and policy clarity, all key to accelerating the UK's sustainable energy future.

Fread Tom's full post here

A great reflection from Virginia Crosbie, Former MP for Ynys Môn, on an inspiring ELUK2025 discussion exploring how nuclear can power clean growth — from SMRs and regional regeneration to financing and public confidence — and showcasing the strength and ambition of the UK's nuclear sector.

👉 Read Virginia's full post <u>here</u>

A great update from **UK National Nuclear Laboratory**, at ELUK2025 — showcasing an interactive model of an integrated net-zero energy system and highlighting the role of nuclear working alongside renewables, storage and hydrogen to deliver reliable clean power and a skilled workforce for the future.

Fread the full post here

A great post from **Suneel Appan**, **Future Biogas**, reflecting on an impactful morning at ELUK2025 — kicking off with a powerful Net Zero Leadership panel, valuable industry connections, and conversations on BECCS, sustainability, AI and data centres.

Read Suneel's full post <u>here</u>

THE ENERGY LANDSCAPE UK (ELUK2026) CONFERENCE & EXHIBITION

SAVE THE DATES





LANDSCAPE UK [ELUK 2026] CONFERENCE & EXHIBITION

3-4TH NOVEMBER 2026 THE KIA OVAL, LONDON

The Housing Landscape UK (HLUK 2026) will be co-located with ELUK2026.

SAVE THE DATE



LANDSCAPE UK [HLUK 2026] CONFERENCE & EXHIBITION

4TH NOVEMBER 2026

THE ENERGY LANDSCAPE UK (ELUK 2026) WILL BE CO-LOCATED WITH HLUK 2026

2,500+ VISITORS

500+ DELEGATES

150+ PANELISTS

20+PANEL SESSIONS

75+ EXHIBITORS

20+ INNOVATION SHOWCASES

SAVE THE DATE — ELUK + HLUK 2026

3-4 November 2026 | Kia Oval, London, UK

Where Energy Meets Housing. Where Ambition Becomes Action.

Just weeks ago, Energy Landscape UK 2025 brought together the leaders shaping Britain's energy future — and the verdict was unanimous:

The time for ambition has passed — now, it's about delivery, affordability, and action.

The momentum was electric. The conversations were honest. The call to accelerate delivery was loud and clear.

And that's why, in 2026, we're going even bigger.

Introducing ELUK + HLUK 2026

On 3–4 November 2026, the UK's flagship energy transition event returns — and this time, it will sit side-by-side with Housing Landscape UK to form one of the most important cross-sector gatherings of the decade.

Because to achieve net zero, energy and housing must move together.

Why This Matters

The UK is entering the most consequential phase of its net-zero journey:

- Clean power must become cheaper and more reliable
- The grid must expand and modernise at pace
- Industry must decarbonise without leaving communities behind
- Data and AI must be powered sustainably and securely
- Homes and buildings must become low-carbon, efficient and affordable
- The public must see and feel the benefits

ELUK + HLUK 2026 is where these missions converge.

Not another conference.

Not another talking shop.

This is the annual checkpoint for the UK — the place to measure progress, build solutions, and accelerate delivery.

What to Expect in 2026

| <u>~</u> | 2,500+ visitors | Government, industry, investors, local authorities, technology innovators |
|----------|-----------------------------------------|---------------------------------------------------------------------------|
| ~ | 500+ senior delegates | Decision-makers & delivery leaders |
| ~ | 150+ speakers | Cross-sector experts driving real-world change |
| ✓ | 75+ exhibitors | Showcasing breakthrough energy & housing technologies |
| <u>~</u> | 20+ panel sessions | From grid reform to decarbonised homes & industrial clusters |
| ~ | 20+ Innovation Showcases | Future-shaping tech, live demos, scaling pathways |
| vou | Breakfast briefings & private andtables | Policy, finance, infrastructure & delivery |
| zon | Cross-sector collaboration | Energy meets housing, data centres, transport, planning, finance |

This is where policymakers, investors, utilities, developers, planners, and innovators come together — not in parallel, but as one ecosystem.

The Power of Co-Location: Energy + Homes = Net Zero

Co-locating Energy Landscape UK with Housing Landscape UK isn't a format decision—it's a strategic necessity.

Because the UK's transition will be won or lost in the places where:

- Homes meet heat networks
- Local grids meet local planning
- Builders meet energy innovators
- Policy meets delivery
- Investment meets outcomes

Net zero is not a single-sector endeavour — it is a national systems mission.

And in 2026, we unite those systems.

Be Part of the Movement

Leading organisations are already securing their place.

Now, it's your turn.

Be seen. Be heard. Be part of the delivery chapter.

d Contact us to:

- Request the ELUK2026 floor plan
- Secure exhibitor & sponsorship opportunities
- Join the 2026 Advisory Committee shaping the agenda

The future isn't waiting. Neither can we.

By 2026, the UK must show progress on:

- Lower bills
- Faster grid connections
- Accelerated clean generation
- Industrial cluster deployment
- Housing decarbonisation & retrofit
- Digital infrastructure & data centre power
- Skills and regional growth
- Public trust & visible delivery

ELUK + HLUK 2026 is where we come together to review, reset, and push forward — with facts, solutions, and commitment.

We are not just talking about the future — we are building it.

Energy Landscape UK + Housing Landscape UK 2026

Powering Britain. Building Britain. Delivering Net Zero together.

CONTACT US

Contact Us — Be Part of the Movement Shaping the UK's Net-Zero Future

Sponsorship Opportunities

Position your organisation at the centre of the UK's energy and housing transition. ELUK + HLUK 2026 offers an unrivalled platform to elevate your brand, influence policy conversations, and connect with leaders driving real-world delivery.

andy.beales@energiselandscape.co.uk

Secure your sponsorship package and unlock strategic visibility, premium networking, and business growth opportunities.

Delegate Participation

Join 500+ senior leaders, innovators, investors, and policymakers shaping the next phase of Britain's energy, infrastructure, and housing transformation.

andy.beales@energiselandscape.co.uk

Register your interest to attend and be first to access tickets and programme updates.

Speaking Opportunities

Are you driving change in the energy, net-zero, or built-environment sectors? We are seeking bold, future-focused voices to share insights, case studies, and forwardlooking perspectives.

rekha.kaur@energiselandscape.co.uk

Submit your expression of interest to speak at ELUK + HLUK 2026.

Advisory Committee

Help shape one of the UK's most influential cross-sector platforms.

Join a select network of leaders guiding content development, speaker selection, and strategic focus for ELUK + HLUK 2026.



rekha.kaur@energiselandscape.co.uk

Make your mark on the future of the UK's energy and housing landscape.

Together, we are not just discussing the transition we are delivering it.



Thank You!

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