



Future of Energy

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The urgency of net zero

To tackle climate change and support the transition to net zero we need to consider an overall systems approach.

Research &
Innovation
Design

Infrastructure

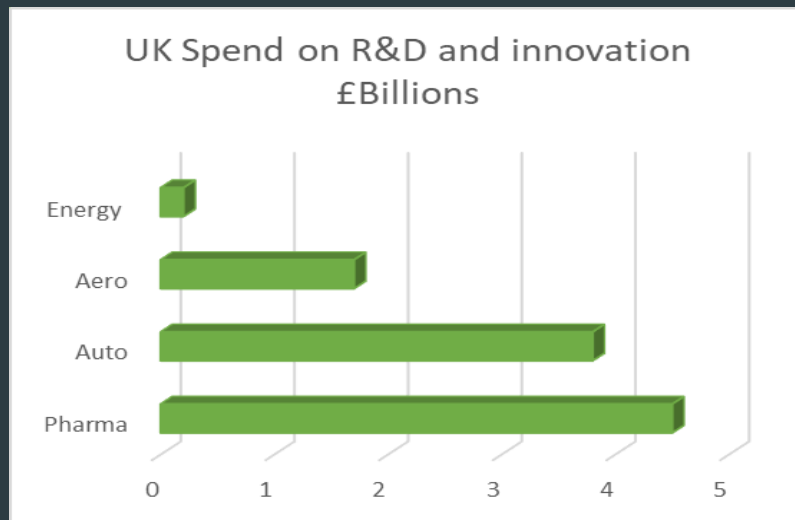
Regulation and
finance

Retail and
Business
customers

Skills and
leadership

Innovation and R&D

Historical Systemic failure of investment in the last 20 years



- Innovation and R&D is an area we need to be more bold, and prepared to make mistakes
- We are great at relatively small-scale innovations
- Large scale infrastructure innovation the UK really struggles

Power

networks

Biggest challenge for renewables, and running behind

- Significant gap between government targets on renewables and the projected pipeline, driven by significant constraints on the networks.
- More consents in the last 2 years than in the last 10, means we are behind and there will be significant challenges in where the future renewable resource is versus where we need power.
- Need to consider way to increase the pace of deployment, and delivering cost effective solutions that are more strategic for the UK as a whole.

Heat Networks

Increasing support and regulatory framework development

- Some capital support from government for Heat Networks and individual heat pumps
- In addition to capital support, government is introducing zoning. This involves central and local government to identify and designate areas within which heat networks are the lowest cost solution for decarbonising heat.
- In addition to zoning, heat network regulation will provide consumer protection for those connected to a heat network from 2024 to ensure that the zoning regulation doesn't undermine consumer protection.

EV networks

Roll back on 2030 EV target sending confusing messages

24.6% of households don't have access to off street parking, around 7 million households that will need to need rely on our public charging network.

At the end of April 2023, there were around 40,000 electric vehicle charging points across the UK. This represents a 37% increase in the total number of charging devices since April 2022.

Opportunities for the future is to use EV charging infrastructure to provide flexibility requirements into the energy network.

Power markets

Power markets have been good to manage trading in benign markets.

“Gas has set a much higher market price than the cost of renewable power production and potentially will continue to do so”.(Aurora)

The market is ill equipped for volatile and transitional market as the short-term market maximises existing infrastructure

Investment for flexibility is still in evolution, and on the current trajectory we will need a significant step up in flexibility capacity for the UK to match renewables

Most renewables will be built either on CFD contracts or long-term contracts with corporates.

Any market reform needs to make sure that interplay with capacity markets, CFD's and the rest of markets don't create an economic outcome that is suboptimal.

Domestic and business customers

Consumers potentially are routes to market for new technologies.

The development of sleeved PPAs, free roof top solar and agile charging are just some examples of where markets start to interact with consumers directly to provide routes to market for new technologies

Ensuring that customers are protected in this future world and that “greenwashing” doesn’t undermine any nascent market is important.

Skills gap

Ongoing energy transitions and decarbonisation efforts are poised to bring profound shifts in the sector's employment, including big new opportunities for job creation in clean energy.

At the same time, traditional energy sectors will experience declining job opportunities. In most cases, this will require the development of both new programmes of education, certification and vocational training along with targeted upskilling or reskilling programmes for the existing workforce. (IEA report on Energy Transition employment)

Opportunity to provide knowledge on renewables and technical skills through the curriculum and beyond, has lost momentum and government support and guidance in the UK and needs to be reinvigorated if we are going to ensure we have the skills to take the UK through the energy transition.

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