

Systems approaches to net zero: the implementation gap

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Can Covid-19 lessons help us address the climate crisis?



City Talk

Schroders Talk
Big tech vs the market: what you need to know

Thursday 27 August 2020 7:00 am

Build back better? No, let's build back smarter and take carbon out of construction

Opinion Dervilla Mitchell

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NATIONAL ENGINEERING POLICY CENTRE

Royal Academy of Engineering

As we look beyond the current crisis and the economy we must use the lessons learned to redouble our efforts to decarbonise. writes Sir Jim McDonald FREng FRSE, Pres. Royal Academy of Engineering.

Scale and impact of the COVID-19 government's decision to postpone even in the throes of this global crisis in the sight of the longer-term

NATIONAL ENGINEERING POLICY CENTRE

Net Zero: A systems perspective on the climate challenge

Achieving a thriving, low-carbon economy through rapid and large-scale systemic change

Beyond COVID-19: Laying the foundations for a net-zero recovery

Five foundations for a net-zero recovery

1. Ensure recovery packages work together as a whole to pivot the UK towards a net-zero economy. The packages must stimulate immediate, low-regrets actions that help set the UK on the path to achieving net-zero, recognising that this is only a first step. Further large-scale and cumulative change is required over the coming decades.
2. Apply outcomes-based procurement processes for all public-sector infrastructure and building projects with a focus on low carbon, including projects that are part of the stimulus package. Procurement is an essential lever for transforming the construction industry and driving decarbonisation of the built environment.
3. Prioritise diversity and inclusion for jobs and skills to reverse COVID-19 impacts and help build net-zero capacity and strengthen long-term capability. The pandemic has had an inequitable impact on women and the Black, Asian and minority ethnic (BAME) community. A strong focus on diversity and inclusion must be present in any short-term measures to create jobs and in longer-term skills planning, to reverse impacts and ensure that there is the capacity and capability to transition to a net-zero economy.
4. Drive digital transformation as an essential enabler of net-zero and resilience. Digital technologies offer the opportunity to reduce carbon and deliver wider benefits, including resilience, through improvements to existing infrastructure and buildings. Data allows individuals and organisations to understand and manage carbon emissions, which is vital for meeting carbon reduction targets.
5. Deploy cross-sectoral systems approaches to policymaking that underpin the interconnectedness of different policy areas and economic sectors. This will ensure that policy interventions work most effectively together to achieve net-zero and deliver co-benefits, reduce the risk of unintended consequences, and help account for social, cultural and behavioural factors, which can act as both barriers to and levers for change.

Introduction The scale of the net zero challenge

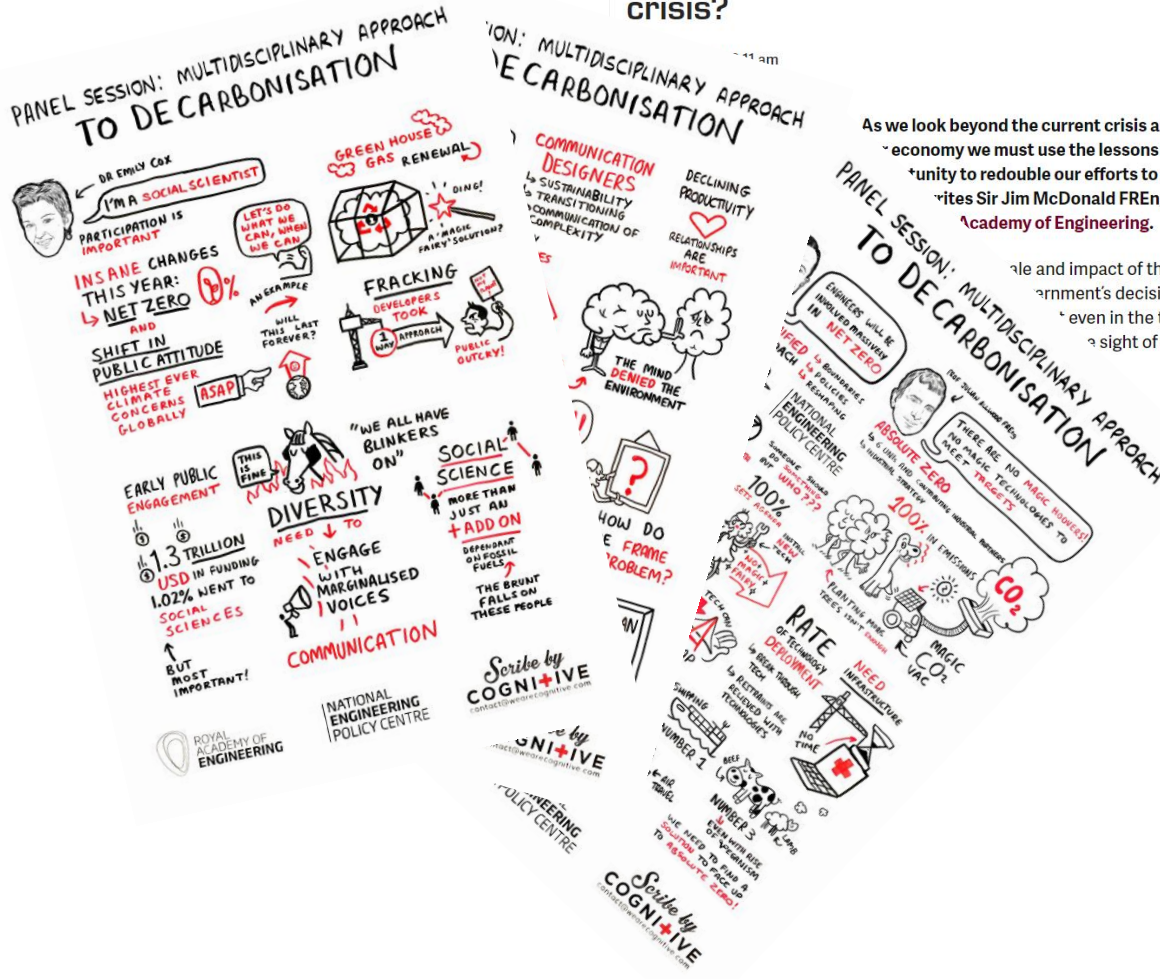
In May 2019 the Committee on Climate Change (CCC) published its report outlining the technical feasibility of reaching net zero greenhouse gas emissions by 2050.¹ On 27 June the UK government enshrined this target into law.

The scale and impact of the COVID-19 global pandemic has, for now, shifted the UK government's immediate focus away from climate change. During this time of national emergency, it is vital that we do not lose sight of the critical present-day global threat posed by climate change. There will be important lessons to be learned from our shared experience of COVID-19 that can be usefully applied to the massive climate challenge that still lies ahead. For example, there will be lessons around future resilience planning and how we can unite behind a common purpose and take positive action to create rapid behavioural, cultural and economic change.

The UK has less than 1,600 weeks of net zero territorial emissions: it is a race against time. It will involve simultaneous transformation of vital, interconnected infrastructure, transport and housing, to enable and supporting sweeping changes and supporting change. A net zero target is not currently not on track. A step change in public sector, even though now plan for rapid action across all parts of the economy and ambition.

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1 Committee on Climate Change, Net Zero Technical Report, (2019) (Accessed March 2020).
2 Committee on Climate Change, Reaching UK emissions - 2019 Progress Report to the President (Accessed March 2020).
3 It is important to note that reaching net zero requires not only about 100% emissions but also a 100% reduction in emissions over the period of the net zero period.



Why a systems approach?

- Net zero by 2050 requires rapid and simultaneous transformations
- Allows integration of all relevant factors into decision making
- Supports decision making across multiple areas of policy
- Co- benefits can be recognised and enabled
- Enables the identification of low regrets decisions
- Avoids the risk of unintended consequences



Benefits of a systems approach

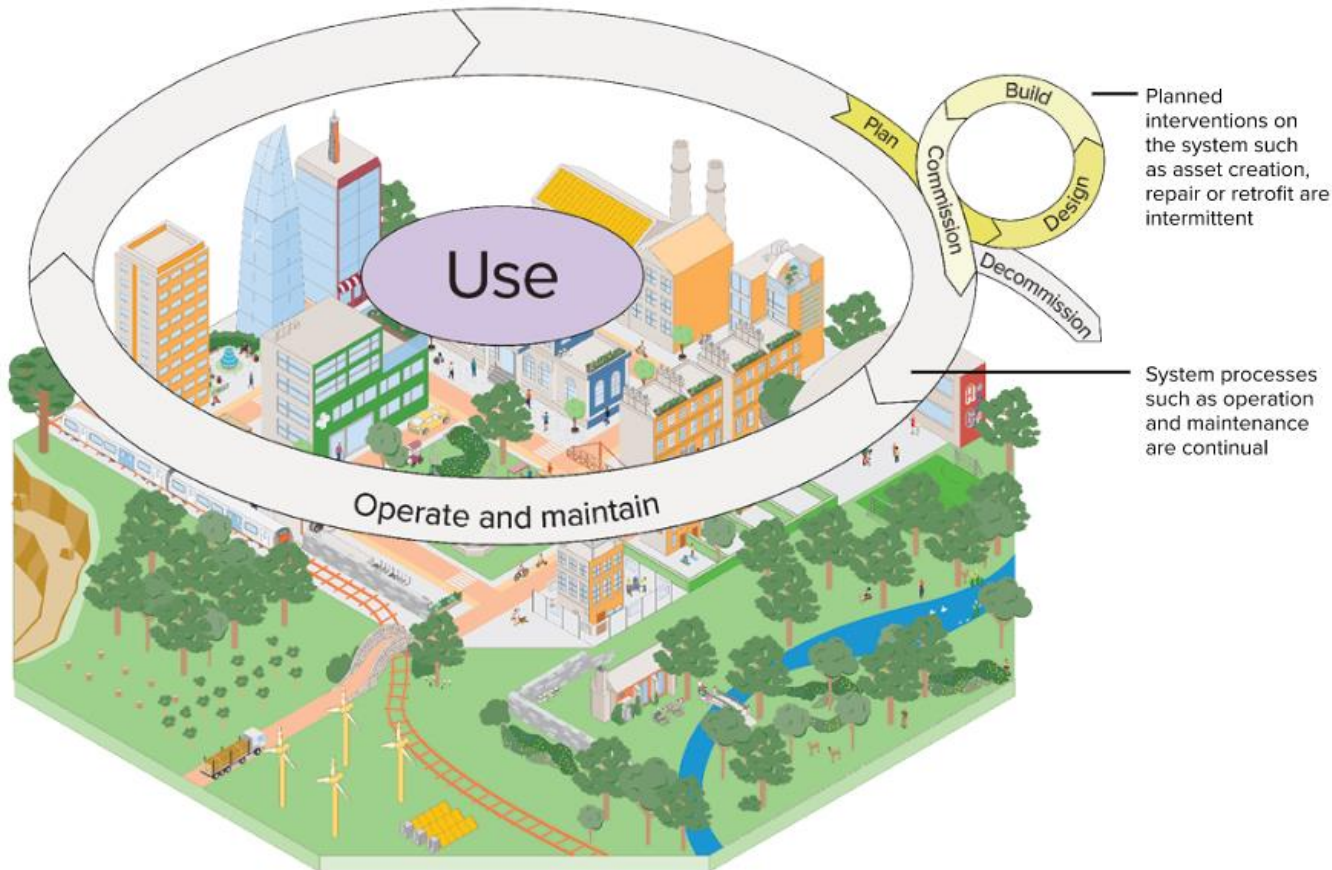
- A picture of the whole
- Enables understanding of complex issues or behaviours
- Understand the interaction between elements
- Ability to interrogate
 - Interfaces
 - Levers
 - Scenarios
 - Human interaction
- Opportunities to collaborate
 - Global vision
 - Local delivery



The image displays a helicopter in the upper right quadrant and a detailed London Underground 'Tube map' below it. The map is color-coded by line and includes a legend at the bottom with various symbols and text. The helicopter is a blue and white Bell 412, flying against a clear blue sky. The Tube map is a complex network of lines and stations, with a legend at the bottom left and right. The legend includes symbols for different types of stations, lines, and services, along with text instructions for passengers.

Plus Rail; Vehicles – conventional /autonomous; Bikes; People

Systems approaches to policymaking: Local scale



Global outcomes

At the global level, the Sustainable Development Goals provide a blueprint to achieve a better and more sustainable future for all - a balance between environmental, social and economic outcomes.

Strategic priorities

The strategic priorities of national governments should align with global goals, informing, for example, 'net zero' targets and built environment strategies.

Local requirements

Decision-makers in the built environment must satisfy national priorities and address local requirements - the needs of the users, the communities and the environment. Participatory processes empower individuals and communities to shape their 'place'.²

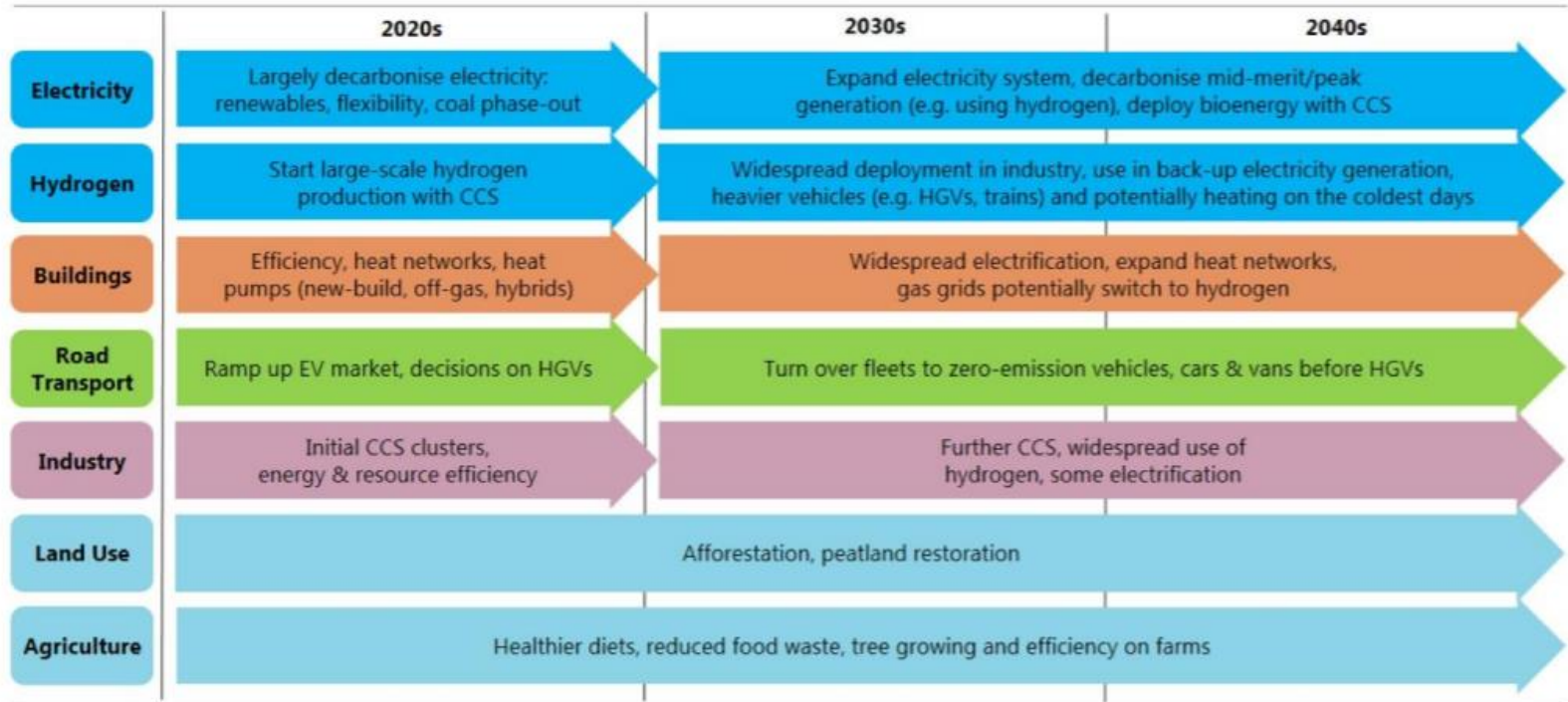
Effective interventions

Investment decisions for individual interventions (whether for operation, maintenance, asset creation, repair or retrofit) are more effective when they are aligned with delivering outcomes at the local, national and global levels. Environmental, social, and governance (ESG) frameworks can assist with tracking alignment.

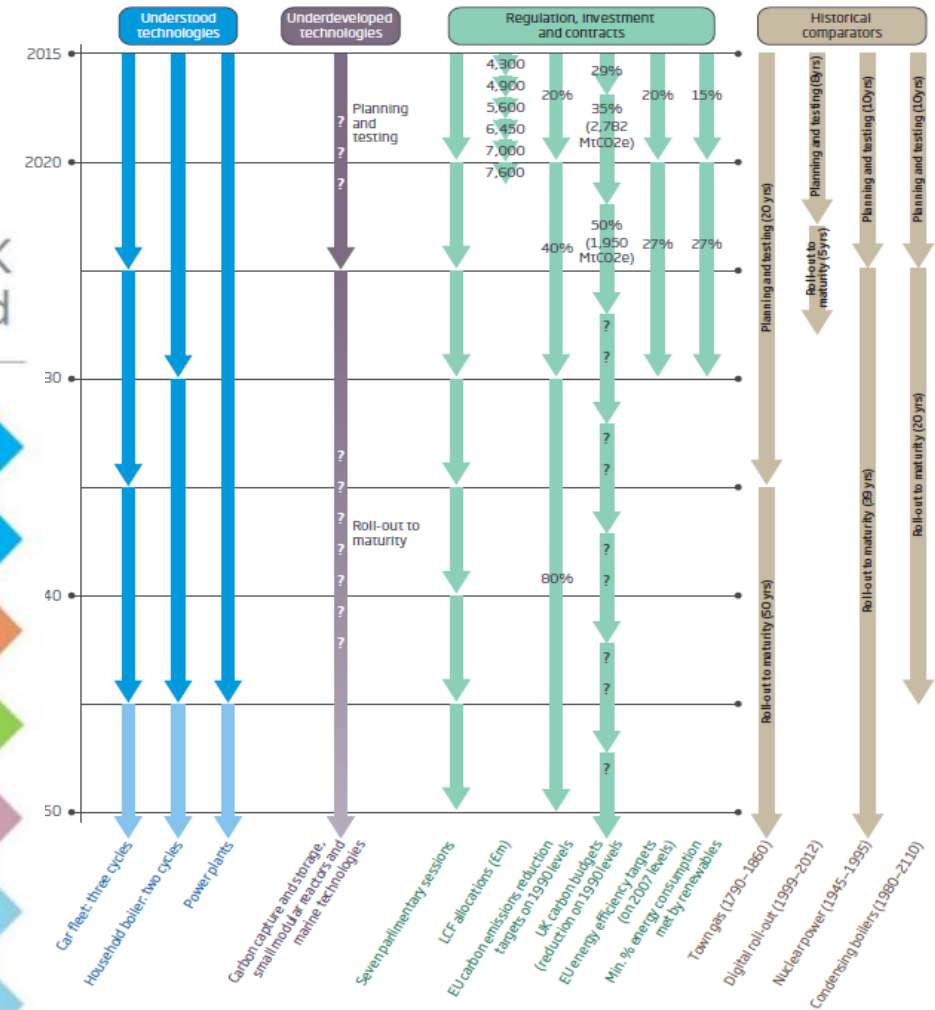
What and When



Reaching net-zero emissions in the UK
How UK net-zero scenarios can be delivered



t/



SUCCESS

Leadership and governance

Pace and plan – an urgency to act

Environment -policy, regulation , standards, measurement and procurement that enable

Collaboration

- Alignment across government departments on NZ pathways
- Governments, industry academia to work on the harder to solve problems
- International collaboration global problem as well as National and local alignment
- Public engagement and behavioural change

Skills - identification and training



Its only a map ! ?

A means to collaborate and
developed solutions through

exploration

investigation

adding data

enhanced understanding

time

Our more complex world needs
integrated systems planning and
delivery to meet the challenges of
climate change

