# Net Zero, Energy and Transport Committee
# 8th Meeting, 2021 (session 6), Tuesday, 5 October 2021

# Determination of Committee priorities: Key challenges and opportunities in the transition to net zero

## Note by the Clerk

### Introduction

1. The remit of the new Net Zero, Energy and Transport (NZET) Committee is to consider and report on matters falling within the responsibility of the Cabinet Secretary for Net Zero, Energy and Transport.

2. The NZET Committee has agreed to spend initial meetings in autumn 2021 hearing from a cross-section of major stakeholders whose interests are relevant to the Cabinet Secretary's main responsibilities.

3. So far, the Committee has heard from:
   - The Climate Change Committee (Link to the Official report for the meeting on 31 August 2021);
   - Former members of the Just Transition Commission (Link to the Official report for the meeting on 7 September 2021);
   - the Scottish National Investment Bank and Scotland's Enterprise Agencies (Link to the Official report for this meeting on 21 September 2021); and
   - The Climate Assembly, the Scottish Youth Parliament, NatureScot, SEPA and Zero Waste Scotland (Link to the Official Report for the meeting on 28 September 2021).

4. On 14 September, the Committee heard evidence from the Cabinet Secretary about the Scottish Government's priorities and how he intends to carry out his cross-cutting governmental role in relation to achieving net zero. (Link to the Official report for the meeting on 14 September 2021)

5. On 16 September, the Committee heard from the Right Honourable Alok Sharma MP, President-Designate of COP26, on the conference's possible outcomes, and their likely impact on net zero policy in Scotland. (Link to the Official report for the meeting on 16 September 2021)

### Evidence session on 5 October and next steps

6. On 5 October 2021, the Committee will hear evidence from two panels:
   - Panel 1: representatives of Ofgem; and
   - Panel 2: representatives from key organisations and sectoral experts (energy, infrastructure and transport).

7. Ofgem is the UK's independent energy regulator. They work to protect energy consumers, especially vulnerable people, and work with government, industry and consumer groups to enable competition and innovation in the energy market and deliver a net-zero economy.

8. Panel 2 comprises representatives from Environmental Standards Scotland, the Infrastructure Commission for Scotland and the Centre for Energy Policy at the University of Strathclyde.

9. ESS is a new independent body set up to ensure the effectiveness of environmental law and prevent enforcement gaps arising from the UK leaving the European Union. It is empowered to make recommendations for improving the effectiveness and enforcement of environmental law.

10. The Infrastructure Commission was set up in 2019, with a remit to "provide independent, informed advice on the vision, ambition and priorities for a long-term, 30-year strategy for infrastructure in Scotland to meet our future economic growth and societal needs." In doing so, it was asked "support delivery of Scotland's low carbon objectives and achievement of our climate change targets."

11. The Commission published its key findings report in January 2020. The Commission's remit also tasked it to "following the completion of this report … to provide advice to Scottish Ministers on the delivery of infrastructure in Scotland, including the possible creation of a Scottish National Infrastructure Company."

12. The role of the Centre for Energy Policy at the University of Strathclyde is to develop original research around energy input to the work of policy makers in energy. The Centre has particular expertise in the macroeconomic modelling of energy.

13. Written submissions provided by all witnesses are annexed to this paper.

14. The 5 October session is the last of the Committee's scene-setting evidence sessions. After October recess, the Committee expects to consider and agree a work programme. This will be published on the Committee's website.

# Submission by Ofgem

Ofgem is the Office of Gas and Electricity Markets. We are a non-ministerial government department and an independent National Regulatory Authority.

We have a strong working relationship with the Scottish Government, from senior level through to our operational and policy teams. In recent years Ofgem's presence in Scotland has also grown with around 500 people now working in our Glasgow office. This helps to ensure we have a thorough understanding of the specific challenges facing the energy sector in Scotland.

Our role is to protect consumers now and in the future by working to deliver a greener, fairer energy system.

We do this by:

- working with Governments, industry and consumer groups to deliver a net zero economy at the lowest cost to consumers;
- stamping out sharp and bad practice, ensuring fair treatment for all consumers, especially the vulnerable; and
- enabling competition and innovation, which drives down prices and results in new products and services for consumers.

We work effectively with, but are independent of, government, the energy industry and other stakeholders within a legal framework determined by government.

Our aim is to make a positive difference for energy consumers, and our principal duty is to 'protect the interests of existing and future consumers'. This informs our whole approach to regulation in Great Britain and the way that we work with stakeholders. It obliges us to evaluate almost any situation or proposed change through the lens of energy consumers. Consumers are of all types, including households, micro-businesses, SMEs, public sector and voluntary bodies, and industrial and commercial companies. All of these consumers are affected by what happens across the energy sector.

Ofgem uses its convening power across industry to drive changes to meet the net zero transition and affordability is at the heart of the changes. We see our role as helping consumers understand, in a manageable and non-threatening way, that we have to change the way energy works in the UK to meet net zero. However we'll keep them informed and work with them and industry to keep costs down.

We will always work closely with governments, industry, and other energy stakeholders across Scotland and GB to deliver a net zero economy at the lowest cost to consumers. As such, we welcome the confirmation of the UK and Scottish Governments' climate change ambitions and the various policies and procedures that they have set out to support their delivery. We recognise that to meet net zero at lowest cost, it is vital that our regulatory decisions are closely co-ordinated with those

of policymakers in Government, and supportive of the UK and devolved government's long-term infrastructure strategy and plans.

If you look back over the past decade, significant progress has been made, particularly in the decarbonisation of the power sector and the amount of energy coming from renewable or low-carbon sources. In addition, the falling costs of onshore and offshore wind shows that through innovation and economies of scale, low-carbon energy sources can become cheaper than their carbon intensive equivalents.

Our ongoing and upcoming energy reforms will provide an incentive for the most efficient use of the network and will reward those that add more value to the system, for example by being more flexible.

The road to Net Zero will certainly pose challenges both socio-economic as well as technological. However, it also presents some significant opportunities for new businesses to prosper across Scotland, as well as new business models, new technology and regulatory innovations that are pioneered here to be exported around the world.

# Submission by Environmental Standards Scotland (ESS)

## Background to ESS

1. Environmental Standards Scotland (ESS) has been established to fill the gap in environmental governance following the UK's departure from the EU. ESS will help ensure public authorities including the Scottish Government comply with environmental laws. ESS will also consider the effectiveness of environmental law and how it is applied.

2. ESS is accountable to and must report annually to the Scottish Parliament. ESS is a Non-Ministerial Office, independent of Scottish Ministers, with a Chair, Board and Chief Executive, whose appointments were approved by the Scottish Parliament.

3. ESS receives a budget allocation from the Scottish Government, £1.5m for the set-up year, and will publish its own annual reports and accounts. It is staffed by civil servants, but will not form part of the Scottish Government.

**ESS Board and Chairman**

4. A Chairman and four board members have been appointed and were approved by the Scottish Parliament at the end of 2020. The Continuity Act allows for two more Members to be appointed. The Chairman of ESS is:

    - Jim Martin (also Chair of the Scottish Legal Complaints Commission and previously Scottish Public Service Ombudsman).

5. The Board Members are:

    - Annalisa Savaresi (Professor of Environmental Law at Stirling University);
    - Marie Fallon (recently retired Director for Regulated Industries at the Environment Agency in England);
    - Paul McAleavy (European Commission, DG Environment); and
    - Richard Dixon (Director of Friends of the Earth Scotland).

6. Summary biographies are available on the ESS website - Who we are | Environmental Standards Scotland

**Functions & Powers**

7. ESS' powers and functions and their statutory basis are set out in **Annex 1**. ESS was established as a corporate body by a Commencement Order laid in Parliament in September 2021, and took on its statutory powers on 1 October 2021.

8. ESS currently has a small staff team of 9 staff, expanding to around 20. The team has so far been focussed on setting up the new organisation, preparing an interim strategy, establishing procedures and setting how the organisation will operate. The ESS board has been considering the first issues that ESS will investigate.

9. ESS published an interim strategic plan on 1 October 2021 setting out how it will operate, including how it will identify and prioritise environmental issues for review and investigation. Whilst there was no requirement to consult on, or for Parliamentary approval of the interim strategy, we would welcome any feedback from the NZET or RAINE parliamentary committee.

11. ESS also has a duty to prepare full strategy document, and must consult on this and lay before the Parliament in 2022. Work on this will commence later in 2021.

12 ESS is establishing a new analytical team to independently monitor and evaluate Scotland's environmental performance. We will also welcome representations from individuals and organisations raising matters of environmental concern. Together these two sources of information will be used by ESS to develop a forward programme of issues for consideration.

13. ESS is also currently mapping out the likely breadth and nature of its remit and role and we have been engaging with a range of stakeholders to assist with this. Early engagement has confirmed that there is considerable interest and anticipation around the establishment of ESS, from both NGOs and the public bodies that will come under ESS' jurisdiction.

14. For example, discussions with the Climate Change Committee have identified that ESS could play an important role in ensuring Scottish public authorities comply with their duties under Climate change legislation. Engagement with stakeholders has also allowed ESS to start to define the breadth of its remit, including clarifying that public authorities include a wide range of organisations delivering functions of a public nature – including transport authorities and energy companies.

**Relationship & Liaison with the Scottish Parliament**

15. The statutory basis for the Scottish Parliament's relationship with ESS is set out in **Annex 2**. In practice we think the relationship and liaison will need to cover a range of areas:

- Scrutiny and approval of ESS 3 year Strategic Plan – late 2022
- Receiving and considering ESS' annual report – late 2022 and thereafter annually
- More routine engagement to ensure effective input/accountability as well alignment between ESS and the work of parliamentary committees - likely to be regular/ongoing
- Approving the appointment of any new ESS board members- possibly 2022.

16. The legacy report of the ECCLR committee in the previous Parliament[1] makes a number of references to the establishment of ESS and the need for relevant committees to engage regularly with ESS, including as part of their scrutiny of environmental issues.

*Environmental Standards Scotland*
*September 2021*

[1] Environment, Climate Change and Land Reform Committee Legacy Report - Session 5 (azureedge.net)

## Annex 1 - Statutory basis for ESS functions and powers

1. ESS is being established **under section 19 of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021 (the Continuity Act)**, which received Royal Assent in January 2021. ESS is currently operating on a non-statutory basis and will not take on its statutory powers until the necessary commencement Order is laid in the Scottish Parliament. This is expected to be laid by Scottish Government in Parliament in September 2021 and ESS is expected to be vested, and take on its statutory powers and functions, in October of this year.

2. **Section 20 of the Continuity Act** provides that the functions of ESS are to monitor, investigate and to secure compliance with, or improvements to the effectiveness of, environmental law. ESS may initiate investigations in response to representations received about compliance or effectiveness, or on its own initiative.

3. **Section 23 of the Continuity Act** places Public authorities and ESS under a duty to cooperate and states that public authorities are expected to try to resolve problems by agreement, without ESS having recourse to formal enforcement powers, wherever possible.

4. ESS is expected to collaborate with the Office of Environmental Protection (OEP) in England, and the relevant bodies in Wales and Northern Ireland, which are being established to undertake the equivalent roles.

5. The Continuity Act provides ESS with a range of statutory powers to enable it to carry out its functions, as follows:

    a. **Section 24** provides ESS with the power to issue an information notice requiring a public authority(s) to provide ESS with any information it requires to carry out its functions;

    b. **Section 31** provides ESS with the power to issue a compliance notice requiring a public authority(s) to take the steps specified in the notice to address its failure to comply with environmental law (and to prevent that failure and the environmental harm associated with it from being repeated in the future);

    c. **Section 26** provides ESS with the power to issue an improvement report where it considers that the actions of two or more public authorities represents a “systemic failure”, and recommending measures that Scottish Ministers and public authorities should take to ensure compliance with environmental law and/or improve its effectiveness; and

    d. **Section 38** provides ESS with the power to make an application for judicial review (or apply to the court for permission to intervene in an existing judicial review) where ESS considers that the conduct of a public authority(s) constitutes a “serious” failure to comply with environmental law

and it is necessary to make the application to prevent, or mitigate, “serious” environmental harm.

## Annex 2 – Statutory basis for Scottish Parliament's relationship with ESS

1. **Section 22 of the Continuity Act and section 3(2) to Schedule 2 of the Act** require that, within one year of vesting, ESS must lay a draft of its strategy in the Scottish Parliament for scrutiny by MSPs for a period of 40 days. Prior to laying the draft strategy in Parliament ESS must consult on the draft. The strategy must be approved by the Scottish Parliament or, if Parliament resolves not to approve it, ESS must revise the draft and present it to Parliament again for scrutiny.

2. In addition, ESS may publish an interim strategy setting out how it intends to exercise its functions during the transitional period. There is no requirement to consult on or for Parliament approval of the interim strategy. We currently expect to publish an interim strategy at (or shortly after) vesting.

3. **Section 12(1) of Schedule 1 of the Continuity Act** specifies that ESS must prepare a report on its activities as soon as is practicable following the end of the financial year and must lay a copy of the report before the Scottish Parliament.

4. Furthermore, **section 1(1)(d) of Schedule 2 of the Act** specifies that the strategy must set out how ESS intends to "respect and avoid overlap" with a number of relevant bodies – including committees of the Parliament whose responsibilities include matters relating to environmental law.

# Submission by Infrastructure Commission for Scotland (ICS) - Tony Rose

As you'll be aware, The ICS was always intended as a short life commission established to provide advice to Ministers. It published two reports during 2020, and completed its work by the autumn of 2020, after which the commissioners and secretariat were stood down.

One of the key drivers for ICS was net zero and inclusion.

The ICS published its two reports during 2020.

- ICS Phase 1 Report
- ICS Phase 2 Report

There are a number of specific sections and recommendations in both reports that are relevant to the work of the committee. As a guide, the executive summary of the Phase 1 Report Key Findings Report is probably the best place to start for an overview, followed by Part C of the Phase 1 Key Findings Report, followed by the executive summary of the phase 2 Delivery findings report.

# Submission by Infrastructure Commission for Scotland (ICS) - Professor Iain Docherty

I would point the committee to recent work on this project of which I am one of the leads; there is substantial crossover between planning well for COVID recovery and attaining net zero in the required time frames.

- https://covid19transas.org/first-active-travel-walking-is-the-big-winner/

# Submission by Centre for Energy Policy, University of Strathclyde, Professor Karen Turner

## Policy Brief
## Establishing a Net Zero Principles Framework to support public policy making


### Summary

- Delivering Net Zero requires pathways that are not only technically, but economically, socially and politically feasible.

- To aid the identification of feasible pathways, CEP has developed a Net Zero Principles Framework (NZPF). The framework sets out key questions and challenges that must be addressed in identifying, designing and considering the nature and aim of public support and policy intervention for any Net Zero action.

- Questions around 'who pays and who gains' set out in this framework align with the objectives of the HM Treasury Net Zero Review, where attention is focused on understanding how the costs of achieving Net Zero emissions are distributed and the benefits returned, the fiscal impacts, risks of competitiveness effects and the impacts of decarbonisation across the whole economy.

- Through development of the NZPF a number of fundamental 'Net Zero Principles' have emerged. These should be considered by policymakers when applying the NZPF to different policy actions. They include:

    1. Understanding who really pays and gains
    2. Identifying pathways that deliver growing and equitable prosperity
    3. Enabling actions that can deliver near term economic returns
    4. Avoiding outcomes that involve 'off-shoring' of emissions, jobs and GDP
    5. Understanding that Net Zero is a societal and public policy challenge


## Setting the foundations for a Net Zero Principles Framework

- One of the key challenges for Net Zero is the need to understand what the policy, political economy and societal consequences of any decarbonisation action or 'pathway' may be. If negative, these give rise to the 'barriers' which are often cited as preventing deployment of technically feasible decarbonisation solutions.

- Our proposition for a **NZPF to support policy analysis and development** involves recognising and asking key questions around two interacting **'enabling'** and **'realising'** stages. The enabling stage does not directly affect

targeted emissions but is necessary to realise emissions reductions. The realising stage represents enabled actions that reduces targeted emissions. (See Figure 1 for general framework and Figure 2 for an example of the framework applied to energy efficiency).

- The NZPF can be used to **identify and understand the consequences of actions** across these two stages. This can help e**stablish solutions that can deliver politically and socially acceptable outcomes** and enable an accelerated Net Zero transition

Figure 1 – Net Zero Principles Framework

| **ENABLING STAGE (ES)**<br><br>Action that does not directly affect targeted emissions but which is necessary to enable emissions reductions (e.g. installing energy efficiency measures in domestic properties) | **REALISING STAGE (RS)**<br><br>Enabled action that reduces targeted emissions (e.g. realising reduced energy demand due to installed energy efficiency measures in domestic properties) |
|---|---|
| **1. Transitory or permanent activity?**<br><br>• How does this impact expectations and responses?<br><br>**2. What is the finance model and who ultimately pays?**<br><br>• Business models and regulatory framework?<br>• User pays - user bills, industry output prices?<br>• Socialising - impacts on public budgets, different forms of taxation?<br>• Business/consumer/citizen responses to finance burdens?<br><br>**3. Does investment create a demand shock and crowding out?**<br><br>• Can investment requirements be met locally, regionally or nationally? | **1. Sustained implications for how businesses operate/how people live?**<br><br>**2. Does the action involve economic efficiency gains/losses?**<br><br>• How and to whom do gains/losses accrue?<br>• Crowding out/supply chain and market impacts?<br>• Need for compensation/contribution?<br>• Sustained, transitory and/or evolving impacts?<br><br>**3. Shift in spending/sourcing patterns**<br><br>• Higher domestic content or greater reliance on imports?<br>• Direct and indirect impacts on national and global emissions?<br>• Who gains/loses overall (i.e. both directly and indirectly)? |

| **4. Can activity deliver near term/immediate net income gains?** | **4. Can activity deliver sustained net income gains?** |
|---|---|
| **INTERFACE**<br>• ES activity necessary to trigger RS<br>• Realising activity may begin quickly alongside ES or require ES completion<br>• Confidence/certainty of sustained RS return may be necessary to secure ES | |

## Net Zero Principles

In setting this initial framing of the NZPF, we have applied five key Net Zero Principles that need to be considered by Governments, regulators and industry when developing and deploying Net Zero policy and practice:

1. Understanding who really pays for any given action/pathway or combination thereof, how and when, and what gains can be used to balance this is fundamental.

2. Policymakers and stakeholder communities need to find and build consensus around pathways that allow regions and nations to sustain and grow the prosperity of populations in an equitable way.

3. Not least in contexts where economic conditions are currently challenging, finding options and pathways that can deliver near term economic returns is crucial.

4. 'Off-shoring' is not the answer in regional/national or global contexts if it only shifts emissions, jobs and GDP overseas.

5. Net Zero is a societal and public policy challenge more than it is a technological one.

## Further reading

- HM Treasury Interim Net Zero Review. Available at https://www.gov.uk/government/ publications/net-zero-review-interim-report

- A wider description of the Net Zero Principles Framework and its application to a specific Net Zero action (CCUS) is set out in the viewpoint paper 'The need for a Net Zero Principles Framework to support public policy at local, regional and national levels' published in the Local Economy Journal in January 2021 and is available to download at: https://doi.org/10.1177/0269094220984742

- The first iteration of the Net Zero Principles Framework (developed through our work on several net zero policies) is described in the CEP policy brief 'A

Net Zero Principles Framework: Fundamental Questions for Public Policy Analysis'. It is available to download at: https://strathprints.strath.ac.uk/71580/

- Further application of the Net Zero Principles Framework can be found in the joint report 'Laying the Foundations for a Net Zero Society: Principles and Infrastructure for a Climate Resilient and Economically Sustainable Recovery' by CEP and the Bellona Foundation. It is available to download here: https://strathprints.strath.ac.uk/72953/

- To learn more about the application of the Net Zero Principles Framework please contact CEP at: CEP@strath.ac.uk

## Appendix – Figure 2 – Net Zero Principles Framework – Energy Efficiency Example

| **ENABLING STAGE (ES)**<br>Action that does not directly affect targeted<br>emissions but which is necessary to enable<br>emissions reductions | **REALISING STAGE (RS)**<br>Enabled action that reduces targeted emissions (e.g. realising reduced energy demand due to installed energy efficiency measures in domestic properties) |
|---|---|
| **1. Transitory or permanent activity?**<br>• Transitory - where timeframe crucial in context of producer expectations and allocation<br>of resources<br>• How does this impact expectations and<br>responses?<br><br>**2. Finance model and who ultimately pays?**<br>• ECO, government grants, loans<br>• ECO socialised through energy bills<br>• Socialising through taxation can deliver<br>greater economic gains<br>• But greater risk diverted funds and negative impacts in some timeframes<br>• Availability of funds may be key factor affected by economic/political landscape<br><br>**3. Transitory investment as traditional demand shock**<br>• Expansion favours construction industry and supply chain | **1. Efficiency gains**<br>• More efficient households reduce cost of<br>running homes<br>• Demand led expansion, price pressures<br>• Energy supply and export-intensive sectors may lose out<br>• Do those paying realise energy efficiency<br>gains?<br>• Sustained expansion (incl. household real<br>incomes) evolving through simultaneous enabling and realising<br><br>**2. Potential shift in spending/sourcing patterns**<br>• Can higher domestic content be achieved?<br>• Economic expansion means rebound will be present<br><br>**Summary** - Realising efficiency gains that deliver sustained reductions in the cost of delivering residential energy |

| | |
|---|---|
| • Can investment requirements be met locally, regionally or nationally?<br><br>**Summary** - Retrofitting activity etc. is economic activity that can deliver immediate economic gains but only for as long as programmes last. Questions around who returns accrue to and when, is there rent seeking behaviour etc. | savings translate to real income gains, which in turn delivers sustained demand-led economic expansion |

**INTERFACE**

• Buildings and equipment need enabled action that reduces targeted emissions and is
necessary to enable emissions reductions to be retrofitted or replaced

• As individual households receive retrofits/new equipment they can begin to enjoy efficiency gains

• If households need to pay / bear costs of disruption, will assess but discount future
savings on energy bills

• Sustained wider economy returns and/or reductions in fuel poverty costs may be necessary
if public support of retrofitting programmes required

# Road to Net Zero Overview - Centre for Energy Policy (CEP)

## Introduction

The HM Treasury Interim Net Zero Review (2021)[1] stated that:

- The UK has made significant progress in decarbonising its economy but needs to go much further to achieve net zero.
- This will be a collective effort, requiring changes from households, businesses and government. It will require substantial investment and significant changes to how people live their lives.
- This transformation will also create opportunities for the UK economy. New industries and jobs will emerge as existing sectors decarbonise or give way to low carbon equivalents

Our focus at the Centre for Energy Policy is: what will the net outcomes be for workers and quality of jobs; household income distributions and the cost of living; the trajectory of UK GDP and the nation's productivity?

## Key opportunities and challenges of Net Zero delivery

The sections below summarises the key economic and policy opportunities and challenges in net zero policy areas such as offshore wind, electric vehicles, industrial decarbonisation and energy efficiency. This is from a CEP perspective and focuses on policy areas where CEP has undertaken research / policy analysis.

### 1. Offshore wind

**Target: "We believe that as much as 11 GW of offshore wind capacity is possible in Scottish waters by 2030"** (Offshore wind policy statement, Scottish Government, 2020)

CEP perspective of key opportunities and challenges:

| Opportunities | Challenges |
|---|---|
| 1. Increasing generation of renewable electricity needed to decarbonise other sectors (transport and heat)<br>2. Significant economic contribution from sector growth and lease of seabed<br>3. Skills and expertise of offshore workers can be utilised – contributing to facilitating a 'Just Transition' | 1. Ensuring significant private investment is forthcoming – establishing and evolving the policy model effectively<br>2. Ensuring the use of local supply chains is effectively and meaningfully incentivised and deployed as appropriate<br>3. Effectively developing alternative use of electricity when demand is low (storage, H2 production etc.) |

[1] https://www.gov.uk/government/publications/net-zero-review-interim-report

**2. Electric vehicles**

**TARGET: "We will phase out the need for new petrol and diesel cars and vans by 2030"** (Climate Change Plan Update – 2021 Compendium, SG, 2021)

CEP perspective of key opportunities and challenges:

| Opportunities | Challenges |
|---|---|
| 1. More environmentally friendly – zero tailpipe emissions<br><br>2. Likelihood of reduced fuel and running costs compared with petrol and diesel<br><br>3. Build up of UK manufacturing base for batteries and EVs could bring significant economic contribution | 1. Building and funding a resilient, accessible and affordable charging network<br><br>2. Reduced tax take for UK Government as petrol and diesel phased out – new model required for taxing EV use/fuelling<br><br>3. Private transport remains and may become more unaffordable for some in society – balancing who meets the costs against who reaps the benefits, and considering implications for public transport policy and strategy |

**3. Industrial decarbonisation**

**TARGET: "Emissions will need to reduce by at least two-thirds by 2035 and by at least 90% by 2050, with 3 MtCO2 captured through Carbon Capture, Usage and Storage (CCUS) and around 20 TWh switching to low carbon fuels by 2030**" (Industrial Decarbonisation Strategy, BEIS, 2021)

CEP perspective of key opportunities and challenges:

| Opportunities | Challenges |
|---|---|
| 1. Safeguarding UK manufacturing with associated economic and societal benefits<br><br>2. Reduced emissions and creation of 'low carbon' essential products (steel, chemicals etc.)<br><br>3. Creating new and/or replacement sources of value-added via creation of new sectors – such as the transport and storage of CO2 and H2 production | 1. First/early mover challenges of retaining competitiveness in international markets - risk of simple off-shoring UK production of things we continue to consume<br><br>2. Supporting industries through significant change, with new associated costs, and increasing efficiency/developing competitive advantage in international greener production<br><br>3. Ensuring new infrastructure (to transport and store CO2) or switch fuel (H2) is available at the right time and price |

**4. Energy Efficiency**

**TARGET: "We want our homes to be as energy efficient as possible, meeting a minimum standard equivalent to EPC C at least, where technically feasible and cost-effective, by 2035"** (Draft Heat in Buildings Strategy, SG, 2021)

CEP understanding of key opportunities and challenges:

| Opportunities | Challenges |
|---|---|
| 1. Reducing energy demand and emissions across the UKs housing stock<br><br>2. Reducing bills and helping towards 'fuel poverty' targets<br><br>3. Potential for significant economic benefits both from delivering retrofitting programmes in ways that boost UK supply chains, and from wider economy spending/activity where households become better off as a result | 1. Significant private/public funding requirement, particularly for those less able to pay for retrofitting<br><br>2. Public 'buy in' needed across large proportion of UK households in both able and less able to pay groups<br><br>3. Ensuring competitive and affordable supply chain capacity is met at local and regional levels in required timeframes |