# Climate Change Committee's advice on Scotland's carbon budgets

Cross-party group on renewable energy and energy efficiency

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## Historical greenhouse gas emissions in Scotland Emissions in Scotland have fallen by 50% since 1990, but progress has stalled more recently





### Historical emissions by sector

## Progress has been dominated by reductions in electricity supply





**Source:** National Atmospheric Emissions Inventory (2024) Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland: 1990-2022; CCC analysis.



## The Balanced Pathway to Net Zero in 20245 in Scotland

Action has slowed in recent years, the pace of emissions reduction will need to increase to levels seen between 2009 and 2016





## The recommended Scottish carbon budgets (2026-45) Average annual reductions below 1990 levels: CB1 (2026-2030): 57%; CB2 (2031-2035): 69%; CB3 (2036-2040): 80%; CB4 (2041-2045): 94%





100

## Distribution of emissions reductions during carbon budget periods Action needs to broaden across a wider range of sectors to deliver the required reductions





## Balanced Pathway by sector

## Many of today's highest-emitting sectors will be largely decarbonised by 2045



2050



## Balanced Pathway for agriculture Agriculture emissions fall by 34% by 2035, but it is the highest emitting sector from 2030 out to 2050 in our pathway



#### a) Today's six highest-emitting sectors



## Balanced Pathway for surface transport Emissions fall by 66% from 2022 to 2035 and by 97% by 2045



#### a) Today's six highest-emitting sectors



## Roll-out of EVs in the Balanced Pathway By 2035, 60% of Scottish cars are EVs.

Battery-electric car share of total fleet (%)





## Balanced Pathway for residential buildings Emissions fall by 33% 2022 to 2035 and by 92% by 2045



#### a) Today's six highest-emitting sectors



#### Roll-out of heat pumps in the Balanced Pathway

By 2035, 40% of Scottish homes have low-carbon heat and 23% have a heat pump

Proportion of homes with a heat pump (%)





## Balanced Pathway for industry Emissions fall by 51% 2022 to 2035 and by 85% by 2045



#### a) Today's six highest-emitting sectors



Electricity supply fully decarbonises by 2030 and expands to support increasing demand Wind and solar have an essential role with capacity and generation more than tripling by 2035



Variable renewable generation (TWh)



## Drivers of emissions reductions Electrification and low-carbon supply provides almost half of the required reduction





## Sources of emissions and negative emissions in 2045

Residual emissions are offset by negative emissions from land use sinks and engineered removals





## The cost of the transition, relative to the baseline

Upfront investment leads to significant savings, resulting in a net saving during the early 2040s





Households contribute to around a third of emissions reduction in 2040 72% of that is from just two actions: switching to an EV and a heat pump





Source: CCC analysis.



#### Key recommendations

We have 18 priority recommendations to legislate and deliver these carbon budgets

Priorities include:

- Support households to install low-carbon heating
- Support households to install home insulation measures
- Expanding EV charging and travel infrastructure
- Long-term certainty and incentives for farming and nature
- Public and business engagement
- Jobs and industry



The transformation of the energy system in the UK Balanced Pathway from 2025 to 2050 The 2025 energy system is reliant on fossil fuels and volatile energy prices





The transformation of the energy system in the Balanced Pathway from 2025 to 2050 The 2050 energy system uses more efficient electric technologies, with wasted energy halved





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