GETTING THE HOUSE IN ORDER

PRIORITIES FOR HOMES IN THE CLEAN GROWTH PLAN

HOMES & CLIMATE CHANGE

The Paris climate agreement was a landmark achievement. All countries around the world now face the challenge of delivering on its ambition, making the rapid cuts to carbon emissions across their economies that will be essential to prevent the worst effects of climate change. Current global pledges are insufficient to meet the goals of the Paris agreement, and all nations will have to up their game.

The UK has been a global leader on climate change, passing the Climate Change Act in 2008, and more recently legislating the 5th carbon budget which sets emissions targets to 2032.

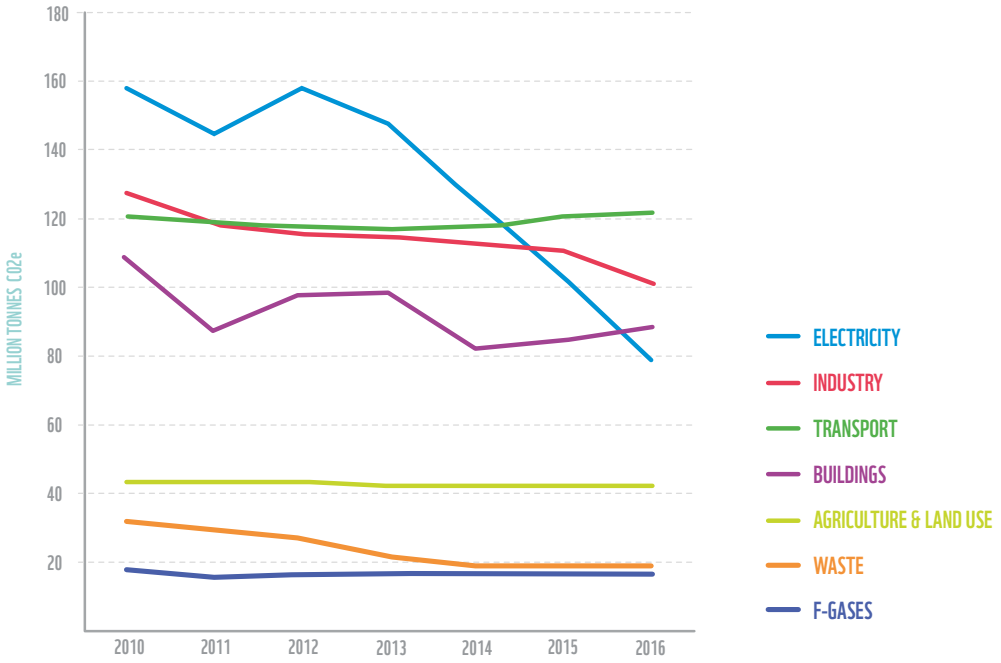
The UK also has a strong track record in cutting its own emissions, which have fallen by 42% since 1990. In the process, energy bills have come down thanks to more efficient products (saving the average home £290 a year since 2008[1]), recycling rates have risen and the air is cleaner thanks to less coal being burnt at power stations.

This strong record looks set to slow, however, with total UK emissions set to exceed carbon targets by up to 30% in 2025[2]. Strong recent progress in the electricity sector is not being mirrored in key sectors like buildings and transport, and a key task of the Clean Growth Plan will be to ensure that all areas are playing their part.

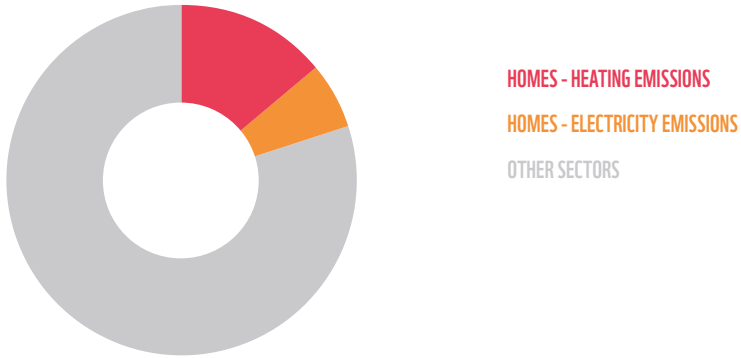
Tackling the emissions from homes must be a priority. Their emissions, 20% of the UK total, are rising and there are significant gaps in Government policy that mean opportunities to lower energy bills and improve the warmth and comfort of homes will be missed.

1. CCC (2017) Energy prices and bills – impacts of meeting carbon budgets
2. CCC (2017) Progress report to Parliament. 'At risk' and 'policy gap' emissions.

UK CARBON EMISSIONS BY SECTOR



HOMES AS A PROPORTION OF TOTAL UK EMISSIONS



Source: BEIS (2017) Provisional GHG statistics for 2016; BEIS (2017) Final GHG statistics for 1990-2015; CCC calculations.

WE DON'T HAVE A CENTURY TO HIT OUR PARIS TARGETS

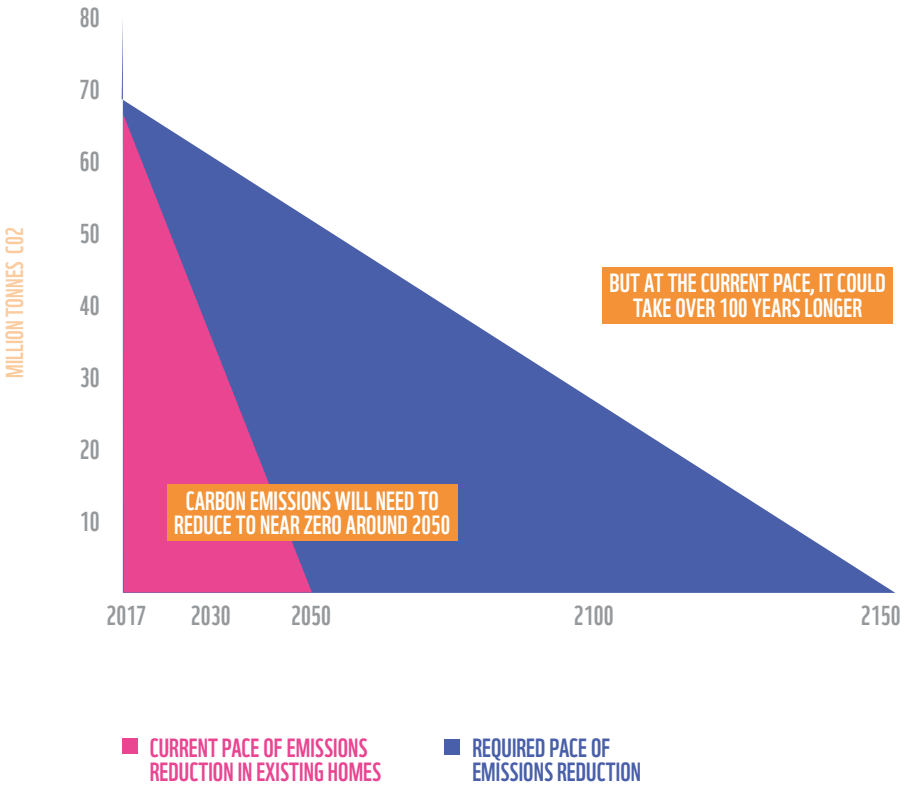
EMISSIONS FROM HOMES AREN'T BEING REDUCED FAST ENOUGH TO HIT OUR CLIMATE CHANGE TARGETS.

At the present rate it will take a century for emissions from existing homes to fall to zero[3]. Ultimately, emissions from all sectors will need to fall as close to zero as possible to meet the ambition of the Paris Climate Agreement to limit global temperature rise to well below 2C[4], let alone achieve the ambition of 1.5C.

And without better standards for new homes, total housing emissions will continue to rise. By 2030, **emissions from all homes are set to increase by 3%**, instead of falling by 10% as recommended by the Committee on Climate Change. The slow pace of improvement to existing homes will fail to offset emissions from newly constructed ones.

3. Emissions from existing homes are expected to reduce by 0.5MT per year to 2022. At that rate, it'll take 130 years to reduce emissions from existing homes to zero. It may not be possible to reduce emissions from homes to zero; this number is intended simply to highlight that the current rate of progress towards either existing UK targets or beyond, is too slow.
4. Rockstrom et al. (2017) A roadmap for rapid decarbonization

ESTIMATED FUTURE EMISSIONS FROM EXISTING HOMES



WHAT ARE THE SOLUTIONS?

ENERGY EFFICIENCY

UK homes are still energy inefficient, leaking air to the outside through leaky walls, roofs windows and doors. Energy bills are higher than they should be, producing easily avoided carbon emissions. There remains significant potential to insulate = homes further, with millions of lofts and walls with too little or no insulation[5]. Cost-effective improvements could reduce their energy demand by a quarter[6].

LOW-CARBON HEAT

Once a home has been well insulated, its remaining emissions will need to be removed by replacing fossil fuel heating systems with low-carbon alternatives. A variety of options are already available including electric heat pumps, district heat networks (supplying low-carbon heat from a variety of sources) biomethane injected into the gas grid and boilers running on locally sourced biomass. Although relatively new to the UK, these technologies are already established in other countries. It may also be possible to produce low-carbon hydrogen, from fossil fuels and biomass using Carbon Capture and Storage (CCS) technology, to run boilers in people's homes.

UNCERTAINTY SHOULDN'T MEAN INACTION

It is not yet clear what the right mix of technologies to eliminate the carbon emissions from heating will be. Energy efficiency will lower energy bills and improve comfort; reducing a homes energy demand will also make it cheaper to install low-carbon heating later. And electric heat pumps and district heat networks can already be installed cost-effectively in rural and urban areas. It may be tempting to 'go slow' until the right answer comes into sharper focus, but all the while emissions will be rising and the opportunity to limit global temperature rise to well below 2C will slip further from reach.

5. ACE & RAP (2016) Buildings and the 5th Carbon Budget
6. UKERC (2017) Unlocking Britain's First Fuel [Forthcoming]

WHAT DO WE NEED TO DO?

Carbon emissions from homes will need to reduce by 10% between now and 2030 to help the UK meet its carbon targets. However, because of slow progress fitting insulation and low-carbon heat to homes, emissions from homes are expected to rise by 3% by 2030 instead.

Energy efficiency is a key area in which the UK is currently falling behind its climate targets. The Committee on Climate Change have long recommended this as a first step to secure early carbon reductions, because it is a low-cost, ready to go technology.

The Committee recommends improving the insulation of around 4 million homes between now and 2025[7]. Current policies will improve just 1.5 million homes over this period; **a three-fold increase in the annual rate of installation will therefore be required[8].**

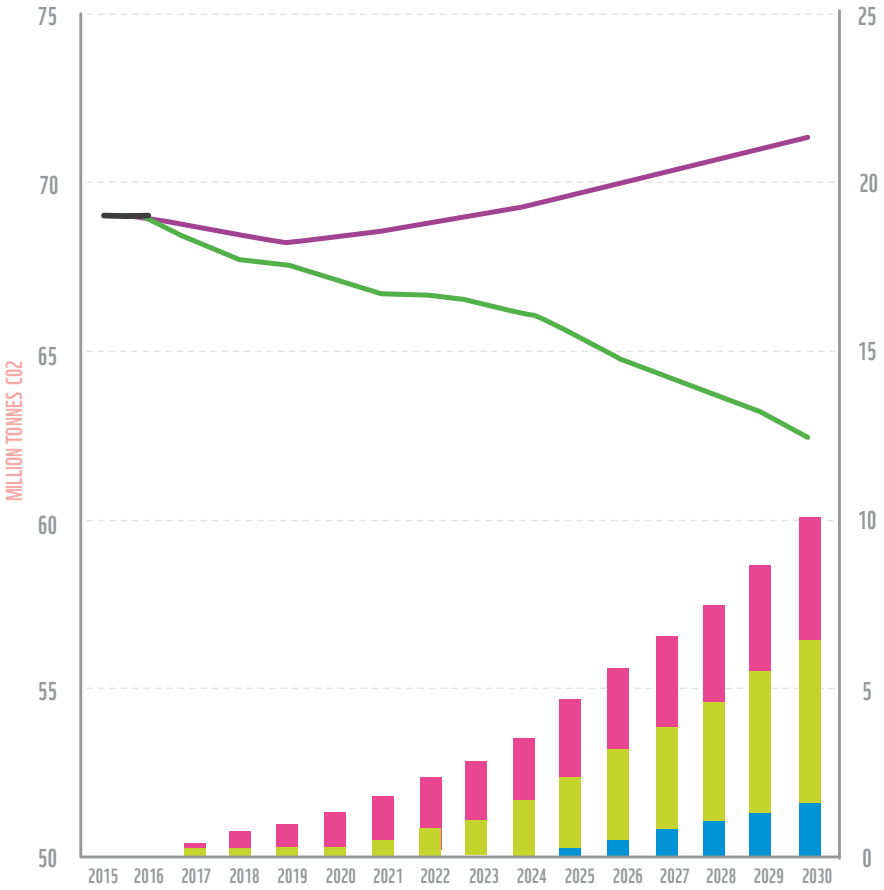
WHAT DOES THE EMISSIONS REDUCTION PLAN NEED TO DELIVER?

	CURRENT ANNUAL INSTALLATIONS	INSTALLATIONS NEEDED
LOFT INSULATION	64,000	545,000
CAVITY WALL INSULATION	92,000	200,000
SOLID WALL INSULATION	31,000	90,000
HEAT PUMPS	20,000	200,000

7. This number is derived from the total cavity, solid wall and loft insulation installations recommended by the CCC from now to 2025, assuming that more than one measure is installed in some homes.

8. In 2016 a total of 187,000 principle fabric insulation measures (cavity, loft and solid wall insulation) were installed, To deliver the CCC's recommended number of these measures by 2025 will require an annual rate of 800,000 measures.

HOW SHOULD THE MISSING EMISSIONS CUTS FROM HOMES BE MADE?



HOW?

ENGAGE PEOPLE

Millions of households haven't done the basics like adding a roll of insulation to their loft or filling their cavity walls. As a nation, we spend £7.5 billion every year on home improvements, but most of that goes on new kitchens and bathrooms rather than insulation. Many people just aren't aware of the money that they could be saving, and insulation just isn't a routine part of the conversations had with tradespeople.

GOVERNMENT CAN HELP

It already offers free insulation to vulnerable households, but current funding isn't enough to reach its own target to eliminate fuel poverty by 2030[9]. In 2012 the UK Government replaced incentives that were available to all with the Green Deal, which provided loans instead. Many home-owners can already borrow the required cash; the Green Deal offered no new incentive and few people took it up. The Green Deal lives on, providing an alternative way to finance improvements. But we need real incentives to grab people's attention and get them thinking about energy improvements.

THE CLEAN GROWTH PLAN

The Clean Growth Plan is an important opportunity to lay the foundations for a much faster transformation of the UK's leaky, old houses into warm and comfortable homes. For this to happen, the plan should:

- Set a long term aim to improve all homes to an Energy Performance Certificate rating of C or above by 2035, to signal intent to consumers and industry.
- Introduce new incentives that are available to all. A demonstration programme should test zero-interest loans, partial subsidy and equity release schemes (which allow home owners to borrow against the value of their home and repay when they sell).
- Improve the worst rented homes by amending Minimum Energy Standards (England & Wales) to ensure that sure that landlords can't keep tenants in cold, draughty and expensive to heat homes.
- Funding for fuel poverty schemes: annual funding in England must be doubled to get on track with the legislated 2030 fuel poverty eradication target and in future, schemes should be co-funded from Government infrastructure budgets rather than just levied on energy bills as is currently the case.
- Require new home to be ultra-low carbon from 2020. Tighten standards to ensure that developers can't keep building high-carbon new homes that lock householders into higher energy bills and future low-carbon renovations.

9. England's fuel poverty target is to ensure that as many fuel poor homes as reasonably practicable achieve a Band C energy efficiency standard by 2030

WHAT ARE THE OTHER BENEFITS?

Improving a house's energy performance can help turn it into a warm and comfortable home, as well as reduce emissions. For an upfront investment people can lock in permanent savings off their energy bills and live in a healthier and warmer environment. On a national scale, cutting energy waste can boost economic productivity, and reduce the UK's growing dependence on imported fossil fuels. Insulating 4 million homes by 2025 would:

- Wipe over **half a billion pounds** from domestic energy bills in 2025[11]
- That's equivalent to **£25 per household** and as much as **£165 for the homes** where improvements are made
- Save the equivalent carbon dioxide to taking **1.7 million cars off UK roads**[10]
- Speed up the rate at which we cut fuel poverty, which affects **4 million households** across the UK
- Help reduce the strain on the NHS caused by cold homes
- Reduce the UK's increasing dependence on imported fossil fuels

10. (Forthcoming) Frontier Economics (2017) Affordable warmth clean growth
11. Calculated using CCC's 5th Carbon budget scenario. All additional measures from 2017 to 2025; energy prices are BEIS 'reference' forecasts (2016).

WITH THANKS TO:

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