

# Net Zero: Markets v Mandates



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# Why net zero?





## Mandated action

- Paris Agreement
- Climate Change Act - Net Zero 2050

## Not sticks & stones



Buildings account for 40-50% of UK carbon dioxide emissions



Heating and hot water makes up 25% of total energy use and 15% of UK's greenhouse gas emissions



Homes – new and existing – account for 20% of GHG in the UK



Cannot meet climate objectives without major overhaul to how we construct and operate buildings

## Different tools

- 2007 Code for Sustainable Homes
- 2010 EU Energy Performance of Buildings Directive – including nZEB - (implemented in UK through changes to the Buildings Regulations 2010)
- Building Regulations 2010 – Part L
- 2011 EU Energy Efficiency Plan
- 2011 Energy Act – introduces Green Deal
- 2012 Energy Efficiency Directive
- 2014 Heat Network (Metering and Billing Regulations)
- 2014 Heat Network (Metering and Billing Regulations)
- 2015 MEES
- 2016 EU Commission's Energy Security Package
- European Green Deal
- Energy Performance of Buildings Directive 2010
- Zero carbon homes policy – 2015 – now costing occupants of new homes up to £200 a year in extra energy bills
- 2017 clean growth strategy



# UK Housing - what might effective regulation look like?

## **CCC – recommendations on regulation for five areas:**

1. Closing the 'performance gap'
2. Skills Gap
3. Retrofitting existing homes
4. Building new homes
5. Finance and funding



# Strong policy mandates going forward?

Building Regulations

Minimum Energy Efficiency Standards

Ofgem Decarbonisation Action Plan

Future Homes Standard

Built on sand?

# Future Homes Standard

## Very high fabric standard

- Triple glazing
- Standards for walls, floors and doors
- Full decarbonisation of building

**New homes will have low-carbon heating and world-leading levels of energy efficiency**



  
HM Treasury

#SpringStatement



## Part L Building Regulations

### Options:

- 1) a 20% reduction in CO2 emissions over 2013 requirements, achieved through very high fabric levels of energy efficiency; triple glazing, gas-fired boiler and waste-water heat recovery (a cost uplift of £2,500 per house);
- 2) a 31% reduction in CO2 emissions over 2013 requirements, achieved through high fabric levels of energy efficiency; double glazing, gas-fired boiler, waste-water heat recovery, technologies such as photovoltaics (a cost uplift of £4,850 per house).

### But is it a step backwards?

- Removes the Fabric Energy Efficiency Standards

# UKGBC – constructing a framework to incentivise the markets

## Steps to Achieving a Net Zero Carbon Building

### 1. Establish Net Zero Carbon Scope\*

- 1.1 Net zero carbon – **construction**
- 1.2 Net zero carbon – **operational energy**



### 2. Reduce Construction Impacts

- 2.1 A whole life carbon assessment should be undertaken and disclosed for all construction projects to drive carbon reductions
- 2.2 The embodied carbon impacts from the product and construction stages should be measured and offset at practical completion



### 3. Reduce Operational Energy Use

- 3.1 Reductions in energy demand and consumption should be prioritised over all other measures.
- 3.2 In-use energy consumption should be calculated and publicly disclosed on an annual basis.



### 4. Increase Renewable Energy Supply

- 4.1 On-site renewable energy source should be prioritised
- 4.2 Off-site renewables should demonstrate additionality



### 5. Offset Any Remaining Carbon

- 5.1 Any remaining carbon should be offset using a recognised offsetting framework
- 5.2 The amount of offsets used should be publicly disclosed



**D** New buildings and major refurbishments targeting net zero carbon for construction should be designed to achieve net zero carbon for operational energy by considering these principles.

\* Please also note, a further scope for net zero whole life carbon (1.3) will be developed in the future.

# Building for smart...







# Any questions?



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