

Net zero ready new build housing: benefits and barriers to delivery

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Introduction

- Government's target: reduce emissions by 100% relative to 1990 levels by 2050
- Cutting carbon emissions from the built environment is a key priority
- All new residential buildings should be zero carbon from 2025
- Research aim: to investigate how developers in the affordable housing sector can plan effectively for a zero carbon future
- Explored the main challenges and opportunities in delivering net zero carbon new build

What is net zero and how will it be achieved?

- Definition of net zero new homes:

Net zero **construction** + net zero **operational** energy

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Whole life net zero carbon assessment

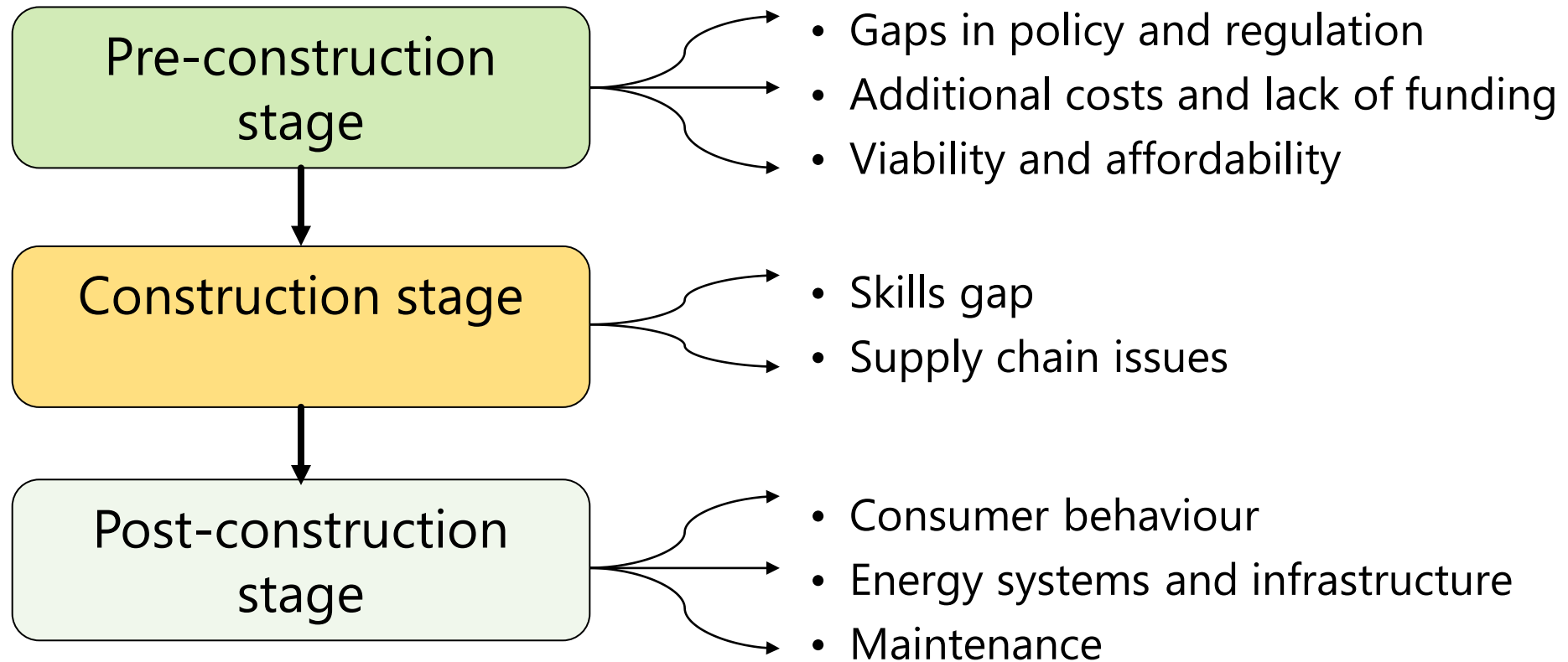
- But, the UK's policy only regulates operational carbon emissions

What is net zero and how will it be achieved?

- The UK's government's approach to net zero carbon:

- 1 adopting a '**fabric first**' approach
- 2 adopting **on-site zero carbon technologies**
- 3 using **off-site measures** to deal with any remaining emissions

Barriers to building net zero homes



Benefits of building net zero homes

Environmental benefits

- Reducing the adverse impacts of climate change

User benefits

- Reduction of operational costs
- Tackling fuel poverty

Benefits for the housebuilder/HAs

- Legislative compliance
- Reputation and legacy
- Future proofing

Trade-offs

- Between the additional cost associated with building net zero carbon homes, the viability and/or profitability of development, and possibly the affordability of those homes
- Other pressing priorities faced by the housing sector
- Challenges relating to the adoption, use and maintenance of new low carbon technologies

Recommendations

1: Greater clarity

- On regulations and policies
- On the role of planning
- On definitions

2: Well-designed developments and homes

- Site design
- Building layout, density and type
- Design of the homes
- Building standards

Recommendations

3: Engaging residents

- Informing and supporting residents
- Post occupancy evaluation

4: Incentives, subsidies and funding

- Upfront grants and subsidy
- Learn from other countries' financial incentives

Recommendations

5: Improving energy systems and infrastructure

- Improve the capacity of the national electricity grid
- Promote innovation and competition in networks

6: Training and upskilling

- Provide training in advance
- Provide incentives for the participants to attend

Recommendations

7: Collaboration and the need for an evidence base

- Collaborations and partnerships within the sector, between the housing sector and other related sectors, and with the government
- Development of a robust evidence base

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