

Building Skills for Net Zero

Preliminary research findings

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October 2020

Please tell us what you think...

- Is there anything that really stands out for you?
- Is there anything missing?
- What should be our priorities?

CO₂ emissions decline from 2020 to reach net zero in 2040

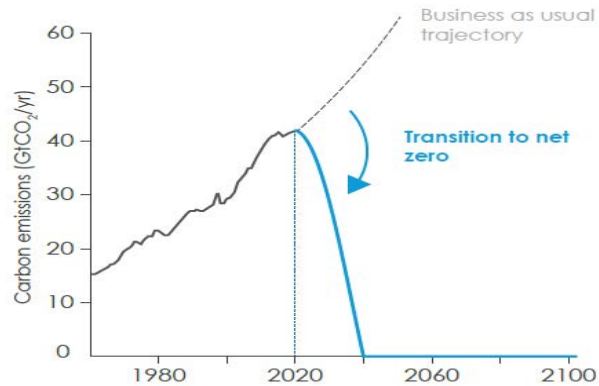


Figure 0.2 - Magnitude of global carbon emission reductions required to limiting warming to 1.5°C. Intergovernmental Panel on Climate Change.

“A 2050 target means that the process needs to be complete by then, at full speed by 2040, and well on the way by 2030, so we have maybe five years to get underway, and we’re only just starting to talk about it.”




Costain CEO: cutting carbon is 'huge opportunity for sector'

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NEWS: 19 cities pledge to make new buildings net zero carbon by 2030



An aerial photograph of a residential neighborhood. The houses are primarily brick with dark roofs. There are many trees and green spaces interspersed among the buildings. The overall scene is a dense, established community.

What support does the buildings industry need to deliver a Net Zero built environment?

Who needs this research?



CITB

How to support industry's
skills needs



Government

Tools and insight to support
policy making

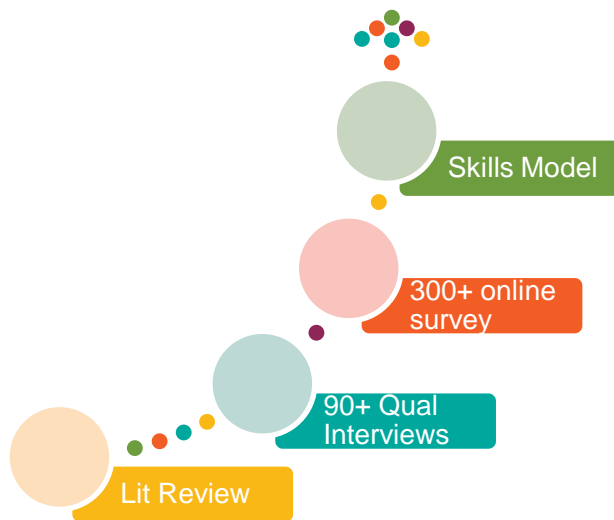


Industry

Clear call to action

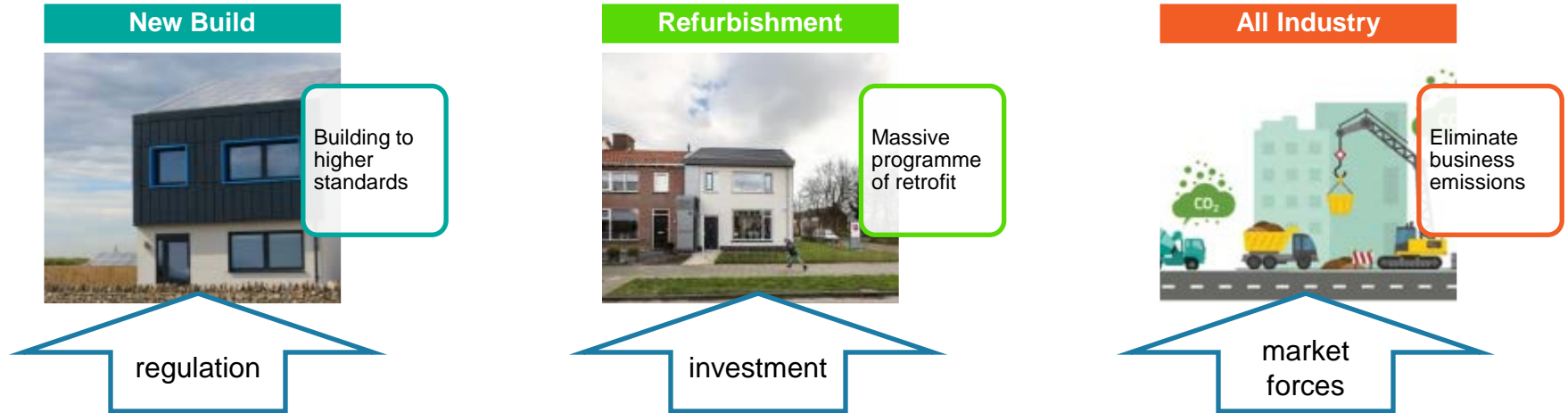
A Skills Blueprint for Net Zero

Net Zero Route Map



What is Net Zero?

Demystify Net Zero



Who needs to do what? When?

80% of homes and buildings in **2050** will be ones we're living and working in today

500,000 deep retrofits are needed every year from **2020** to hit the Net Zero target

Up to **300,000** new jobs could be created in energy efficiency by the end of the **2020s** on current decarbonisation projections



It's the existing stock ... !

Scaling up delivery

Decarbonisation Scenarios

Hydrogen

Fabric First

1-4 years	A very rapid development of training facilities and courses is required, to train around 12,000 people a year, albeit predominantly short courses.
5-10 years	Continuing growth in training requirement at around 30,000 a year. Sharp drop-off toward the end of this period, as all opportunities to undertaken certain measures are exhausted.
10 years plus	No further training required. A continuing decline in the numbers required, as opportunities for further measures are exhausted.

Heat Pumps

Heat Networks

On-Site Energy

Construction faces huge competition for talent

RICS - Retrofitting to decarbonise UK existing housing stock



- Broad existing policy landscape
- current landscape of retrofitting policy drivers
- regulatory
- technical processes and local issues
- gaps and opportunities and where industry standards and tools can determine barriers
- In terms of skills the recommendations focus on:
 - Apprentice training and assessment
 - Public awareness of standards and professional services to help build advice and training in regard to energy efficiency retrofits and wider home improvement works

CBI - Net-Zero: The Road to Low Carbon heat



- Report to show the challenges and opportunities of the decarbonising the heat in our homes in a strategic context for the UK
- A key recommendation is that the Government should create low carbon skills in the relevant energy sectors. It is focused on:
- There needs to be a national plan to train and create activities. National apprenticeships and a CIO programme needs to be developed in collaboration with industry.
 - A national low carbon skills programme, which will ensure the skills for the installation and commissioning of these technologies in the residential and commercial sectors.
 - Skills that support related activities such as installation, inspection and managing operations across the whole of the sector.

CERG - Eight policy packages for Scotland's Green Recovery



- Chair and Secretary Margaret Curran report focused on driving a process, with an aim to ensure the Scottish Government aligns all the policy making that it makes to ensure Scotland recovers a more green economy, while improving from the COVID-19 crisis.
- Of the 8 packages one is focused on building for a greener Scotland. What this is, are our proposals for:
1. Green Heat Hubs
 2. Support for retrofit
 3. Support for innovation and public sector
 4. Skills and apprenticeships
- Linked details on the skills needs and gaps in delivery areas

EERG - Energy efficiency's offer for a net zero compatible stimulus and recovery



- The EERG report focuses on what can be done to cover 19 economic recovery and reconnection a comprehensive government programme that:
- Targets energy efficiency as a national infrastructure investment priority, with LSC targets for all homes.
 - Provide additional public capital investment of £1.8 billion per year in 2020.
 - Establishes stronger incentives for tenants to pay for measures and benefits.
 - Sets out clearer regulation, that requires almost 100% compliance to take action.
 - Supports a long-term approach to delivery in which local authorities play a central role.
 - Ensures strong action prevention, quality assurance and safety standards.
- Linked details on skills needs and gaps

A Green Stimulus for Housing



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The Retrofit Academy - PAS2035 - What is it and what does it mean?



- Understand the role of the Retrofit Academy in the context of the wider industry and what it means for the construction industry.
- Understand what PAS2035 is and what it means for the construction industry.
- Understand what the implications are for the construction industry.

National Grid - Building the Net-Zero Energy Workforce



- 2021: 117,000 new jobs
- 2025: 150,000 new jobs
- 2031: 131,000 new jobs
- Total: 400,000 new jobs

Unpublished reports

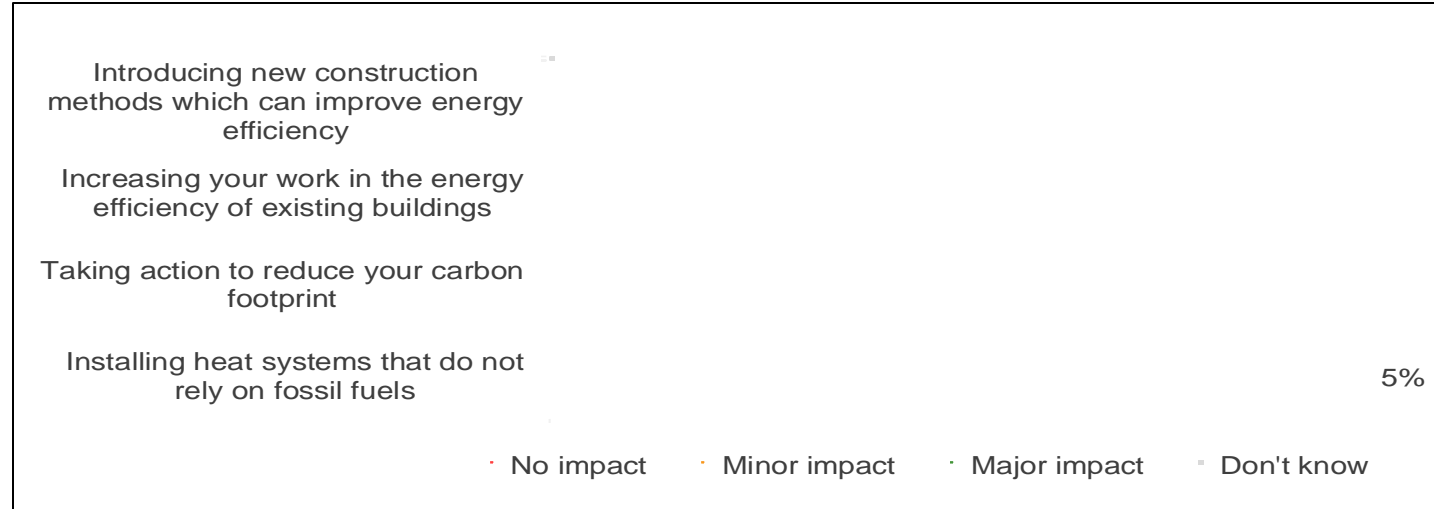


- How much is the cost?
- Impact on skills
- Off peak grid
- Heat storage
- Gas

Existing industry is poised to respond...

- **70% know the skills they needed to contribute to the decarbonisation of the built environment**
- **90% would be willing to re-train, as demand for new roles and skills' changes in the future**
- **The specific skills required to develop low-carbon retrofit and new-build designs are not (yet) in demand**
- **uncertainties on pace of change means we have to prepare for different scenarios**

Industry expects to respond....

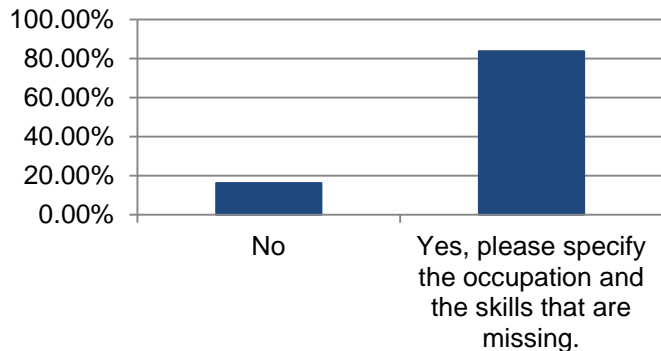


Impact of energy efficient methods in the next 5 years
(CITB DIP Survey 2020, Base 100 employers)

What are the skills / knowledge gaps?

Self-employed

Do you believe there is a skills gap in your occupation/profession for decarbonisation work?



Energy & Low Carbon Design

Understanding sustainable materials

Zero carbon design and offsite construction/MMC

Ventilation training

Key barriers to decarbonisation

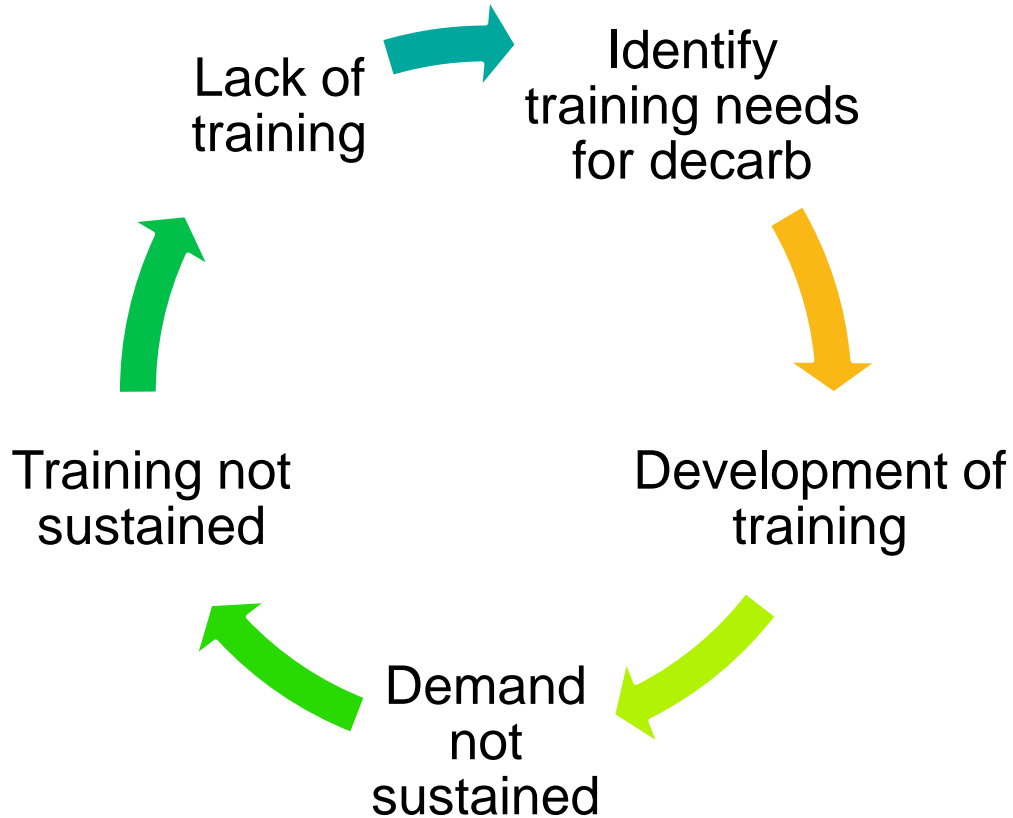
Despite many excellent examples of best practice across the industry and training sector the research finds that the following problems exist:

- **Poor reputation of the sector limits pipeline of talent needed**
- **Industry does not deliver sufficient quality consistently**
- **Training supply is not net-zero ready**

1. Training supply needs to be **net zero ready**

- **Develop content / scale provision**
 - retrofit coordinator
 - Heat pump installation
 - Hydrogen boiler installation / maintenance / conversion
 - General low-carbon systems training
 - Retrofit (including non-domestic and traditional buildings)
 - Modern Methods of Construction (including new-build domestic and non-domestic, and retrofit)
 - Introductory training
 - Inter-trade training
- **Refocus mainstream provision**
 - **RMI**
 - traditional buildings
 - retrofit
 - **Platform / Off-site Construction**
- **Modernise training delivery**
 - **Exploit developments in online learning, i.e. formalise familiar content and channels**

The demand conundrum for decarbonisation skills



2. Create the demand for skills to support net zero

Government should:

Extend compliance schemes

Funding for training

Clarify preferred decarbonisation pathway

Reform ECO

Building Passports

Public procurement

Expand MEES

Co-operatives

Future Homes Standard

3. Establish skilled supply chains for retrofit

- **Target skills supply gaps**
 - Retrofit designers and coordinators
 - Heat pump and insulation installers
 - MMC design and installation professionals
- **Just transition needed**
 - Plan for reskilling in key roles as decarbonisation progresses

4. Assure quality of delivery – performance gap

- **Min competency requirements for decarbonisation work**
 - Supported by CPD and trade association membership
 - Net Zero basic training for all
 - Linked to licencing scheme
 - NOS and NVQs to underpin technical standards (BSI)
 - Competent Persons Schemes review
- **Improve institutional competence (e.g. through management systems)**
- **Implement increased on-site scrutiny (e.g. through Clerk of Works role).**

A Silver Bullet? Errm...no.

- **Achieving net-zero will require**
 - **Government: develop clear and consistent policy**
 - **A significant increase in capacity, supported by training**
 - **Re-skilling existing workers**
 - **Addressing existing issues:**
 - **Quality**
 - **Curriculum**
 - **Reputation**

“Net-Zero can be achieved, but there is no time to waste and no slack.”

Next Steps

With government:

support delivery of policy recommendations

With industry:

workshops webinars with feds / conferences / CLC engagement

With CITB:

Develop interventions with Strategy Team

Develop recommendations for publication

Build momentum to COP 26