

**> Net Zero Cement –
A first for the UK**

Marian Garfield
Sustainability director
Hanson UK

> Hanson UK



300+
manufacturing sites
across the UK



6,000+
deliveries
every day by
road, rail and water



47 sand, gravel
and rock quarries



3 cement plants



1,200+
Hanson-liveried
vehicles



10 packed
products plants



37
asphalt plants



3 grinding
plants making
Regen GGBS



178 ready-mixed
concrete plants



6 marine
aggregate dredgers



19 rail depots and
wharves supplied by
road, rail and sea



1 joint venture
rail company,
Mendip Rail

Our vision

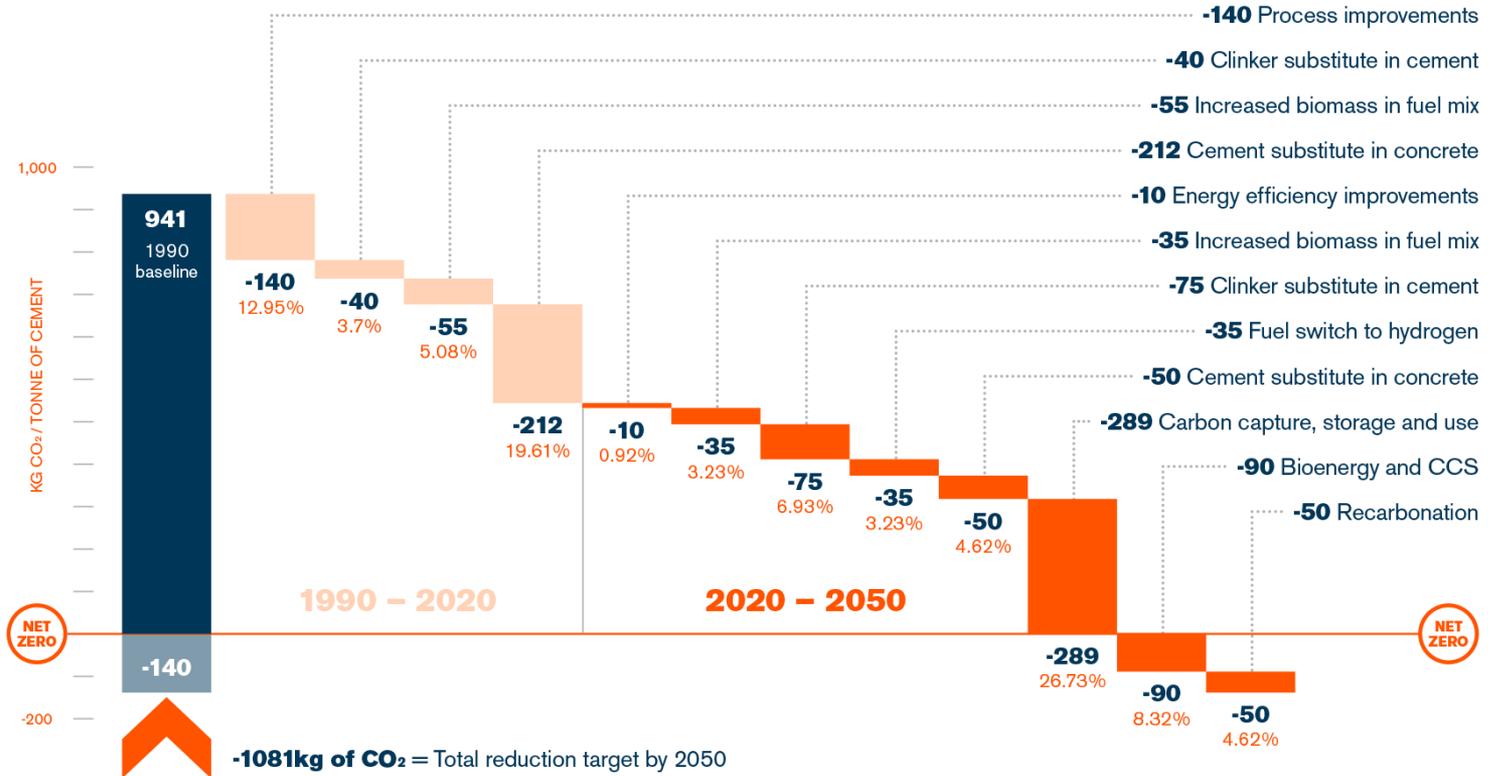
NET ZERO

BY 2050

"Hanson is 100% committed to our transition to net zero by 2050."

Simon Willis, CEO Hanson UK

Key Levers



Why do we need CCS?

CO₂ emissions from cement production



PADESWOOD CARBON CAPTURE AND STORAGE

Making Flintshire a world leader in net zero cement

Putting cement production on the path to net zero

- **Cement is essential to the UK's transition to net zero.**
- There is no viable alternative, and it is fundamental to the development of everything from **large infrastructure projects to homes, schools and hospitals**, and the thousands of green jobs that these projects create.
- The **only way** to produce the cement that the UK needs, without large amounts of carbon emissions, **is to use carbon capture and storage (CCS).**
- Critically **Padeswood CCS will be an exemplar project in the UK and internationally.**
- And it will ensure the long term supply of **net zero cement** for the construction industry.

Environmental benefits



The **1st net zero cement facility in the UK**, and a global exemplar project.



An integral part of HyNet, which could **save 10 million tonnes of CO₂ per year**.



800,000 tonnes of CO₂ captured and stored each year.



Reducing embodied carbon in environmental projects around the UK, including **wind farms, nuclear power, rail & roads**.

Economic benefits



£400m investment into the facility and the region's economy.



Securing **a sustainable future for 2,500 people** employed in the UK cement industry, **15,000 indirect jobs**, and **2.5 million jobs** in the construction industry.



Padeswood currently delivers **Gross Value Added (GVA) of £17.4m per year**, which will increase with the CCS project.

Jobs, skills and training



54 new, additional full time jobs, and up to **350 additional jobs** during construction.



The CCS project will protect **222 direct and indirect jobs**.



Helping local people develop **new skillsets** for an exciting new sector, making the area an **exporter** of technologies, skills and services.



Padeswood to be a centre of excellence for innovation, providing **training and upskilling** – to operate in this world-leading sector.

Status and challenges

- Padeswood is a critical exemplar project
- It is pivotal for the successful decarbonisation of both the cement, and wider construction industry.
- We were delighted in August 2022 to be shortlisted for funding as part of the Cluster sequencing process.
- However, shortlisting does not **guarantee funding**.
- This year we need to make significant investment decisions to be operational by 2027. To do this we require **clarity on timeframe and certainty around funding**.

What will Padeswood CCS involve?



1. Cement kiln – Already operational, capable of producing 800,000 tonnes of clinker every year



2. Heat recovery system – New, fitted to collect heat and improve energy efficiency of the carbon capture plant



3. Gas cleaning system – New, to remove unwanted contaminants and reduce emissions



4. Combined heat and power plant – New, to produce electricity and heat to power carbon capture equipment



5. Carbon capture and compression – New, to extract CO₂ from waste gases and compress for transport and storage



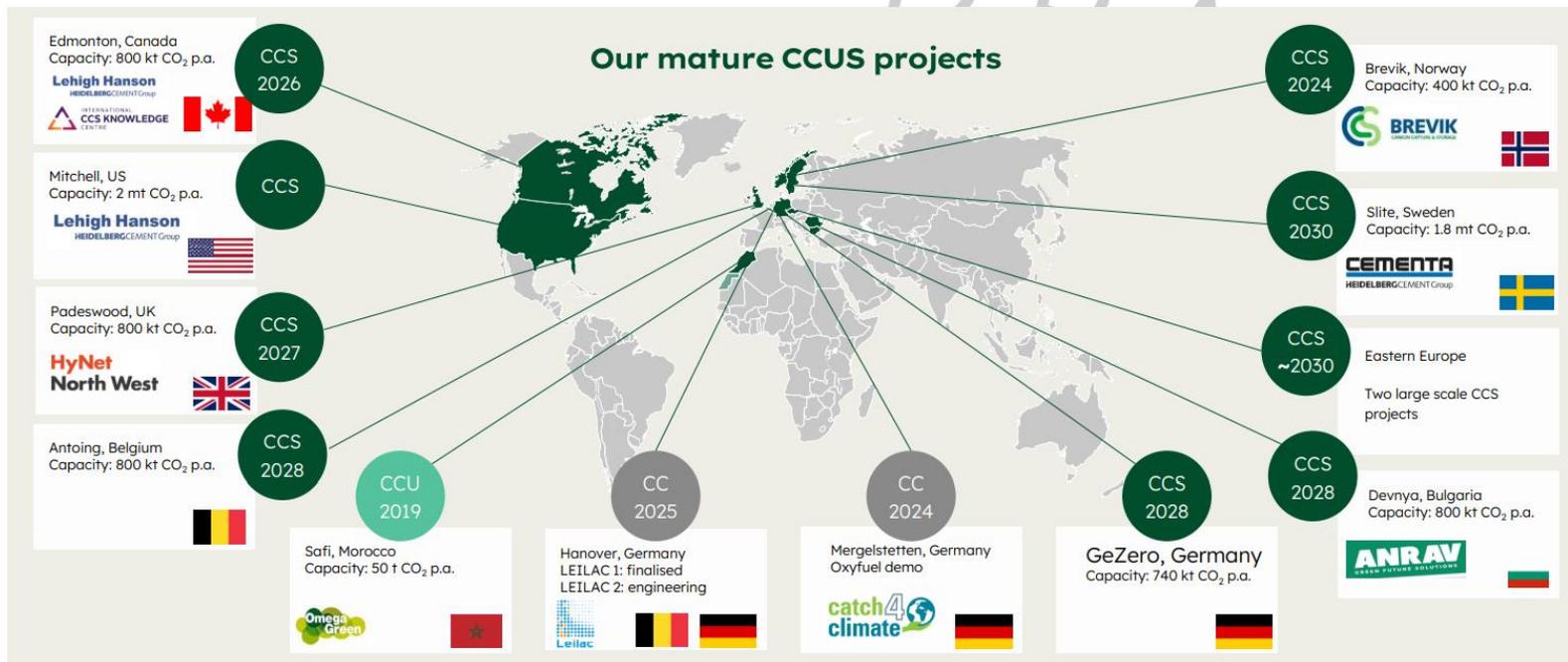
6. Transport pipeline – New, to transport CO₂ from Padeswood to the HyNet pipeline network



7. Storage – As part of the HyNet proposals, CO₂ will be stored safely and permanently in spent gas fields in the Irish Sea

➤ Carbon capture – World Wide

Driving CCUS with extensive and most advanced project portfolio in the sector



➤ **Summary – Hanson’s path to cement carbon neutrality**

- Carbon emissions per tonne of cementitious material have almost halved in the last 30 years
- Conventional techniques could reduce these emissions by a further 20 per cent
- Achieving net zero cement and concrete requires significant research into fuel switching and carbon capture
- Significant Government support is needed to achieve net zero cement and concrete
- Heidelberg materials and Hanson is committed to providing net zero concrete by 2050 and is working on projects using all the levers identified in our carbon roadmap