Tees Valley a Hydrogen Super Place

Chris Rowell

Head of Net Zero,

Tees Valley Combined Authority

Leading the UK regions in Net Zero

- Tees Valley

  Securing investment | Creating jobs
  Transforming the Tees Valley

- TVCA's Net Zero Strategy – 5 point plan
  1. Heavy industry - The Industrial Cluster
  2. Light industry & commercial
  3. Transport
  4. Domestic heating
  5. Natural Capital

- The Cluster Plan - Partnerships & collaboration

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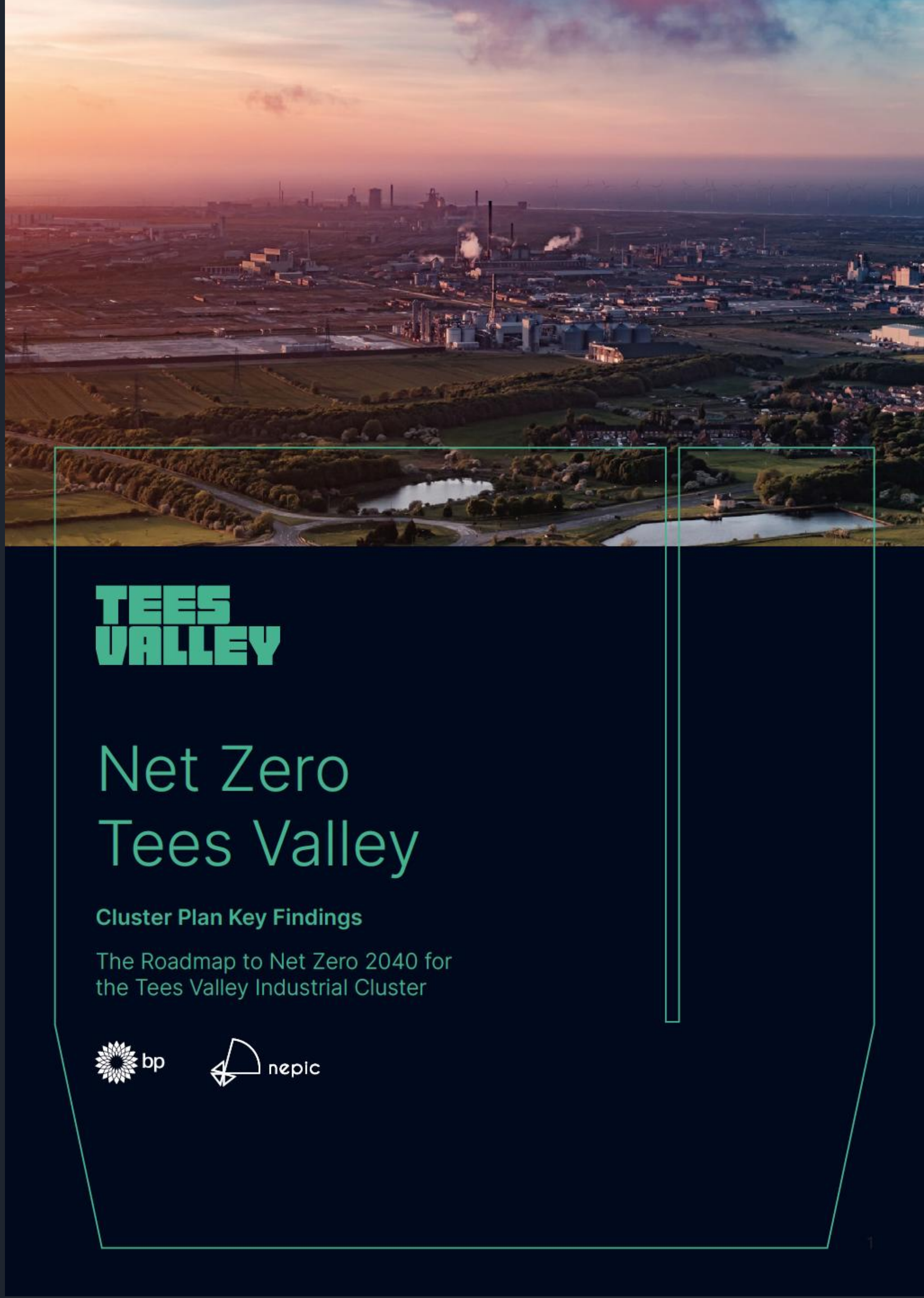
The Cluster Plan

Key Findings

- **2030:** The Cluster will store 100% of the 2020 baseline emissions becoming a **low-Carbon Cluster**
- **2040**: The Cluster will be the **first Net Zero industrial cluster** storing up to 180% of the 2020 baseline emissions
- More than **£10 billion invested in industrial decarbonisation.** This is the baseline – not the projected maximum
- More than **£34 billion in cumulative additional GVA** by 2040.
- Up to **30,000 new jobs** if all plans are realised.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Net Zero Tees Valley

Cluster Plan Key Findings

The Roadmap to Net Zero 2040 for the Tees Valley Industrial Cluster

bp

nepic

The Cluster

66 companies | 5 mile radius

Legacy Industries:

- ICI Integrated Chemical Works | Teesworks

Route To Cluster Net Zero

HYDROGEN

bp
H2Teesside, Hygreen

kellas MIDSTREAM
H2NorthEast

Department for Transport
Transport Hub

PROTIUM
Green Energy

RENEWABLE POWER SECTOR

Net Zero Teesside

bp

WHITETAIL CLEAN ENERGY
EFW Projects

sembcorp

MGT Teesside
Offshore Wind

CARBON, CAPTURE, USAGE & STORAGE

Net Zero Teesside

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The Cluster Plan - Actions

A Unified Voice for the Cluster 2023

- Industrial Net Zero Leadership Group has the aim to ensure Net Zero is delivered in the Cluster.

Carbon Accounting 2023-2025 & onwards

- Using the methodology defined in the Cluster Plan. Demonstrating & quantifying the positive impact of the Tees Valley on the wider UK economy

Carbon Capture & Storage 2027 – 2030

- Working with and supporting NZT, NEP and East Coast Cluster
- Promote and support all CO2 emitters including those not on Cluster Sequencing

Negative Emissions at Scale 2030-2040

- These will be essential to balance residual Scope 1 emission and ensure Net Zero is achieved

Infrastructure & Planning 2023-2030

- Working with our electricity, gas and water providers to develop their networks to support and optimize decarbonised industries

Renewable & Sustainable Fuels 2023- onwards

- Support to renewable and circular economy fuels, creating the conditions for investment here, bringing production technologies for SAF, rDME and more

Low Carbon Hydrogen at Scale 2027-2030

- Working with support and supporting the new supply/demand economy.
- Creating a centre for industrial scale low-carbon hydrogen production

Local & National Coordination

- Working with our local and national stakeholders to communicate plans, exchange knowledge and ensure the pace of decarbonisation is maintained

The Timeline to Net Zero

2022
A United voice for the Cluster

2023 - 2025
Carbon Accounting

2023 - onwards
Renewable & Sustainable Fuels: Energy from Waste & Circular Economy

2023 - 2030
Infrastructure & Planning

2027 - 2030
Net Zero Teesside Commissioned and Initial Operations

2027 - 2030
Low-Carbon Hydrogen – Industrial Scale Production Commissioned

2030
Tees Valley becomes the first low-Carbon Cluster

2030 - 2040
Negative Emissions available at Industrial Scale

2040
Tees Valley becomes the first **Net Zero Cluster**

- Storing **180% of baseline CO2 emissions**
- **£10 billion** invested in decarbonisation
- Creating **30,000 new jobs**
- Increasing GVA by **£34.6billion**

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SUSTAINABLE DEVELOPMENT GOALS

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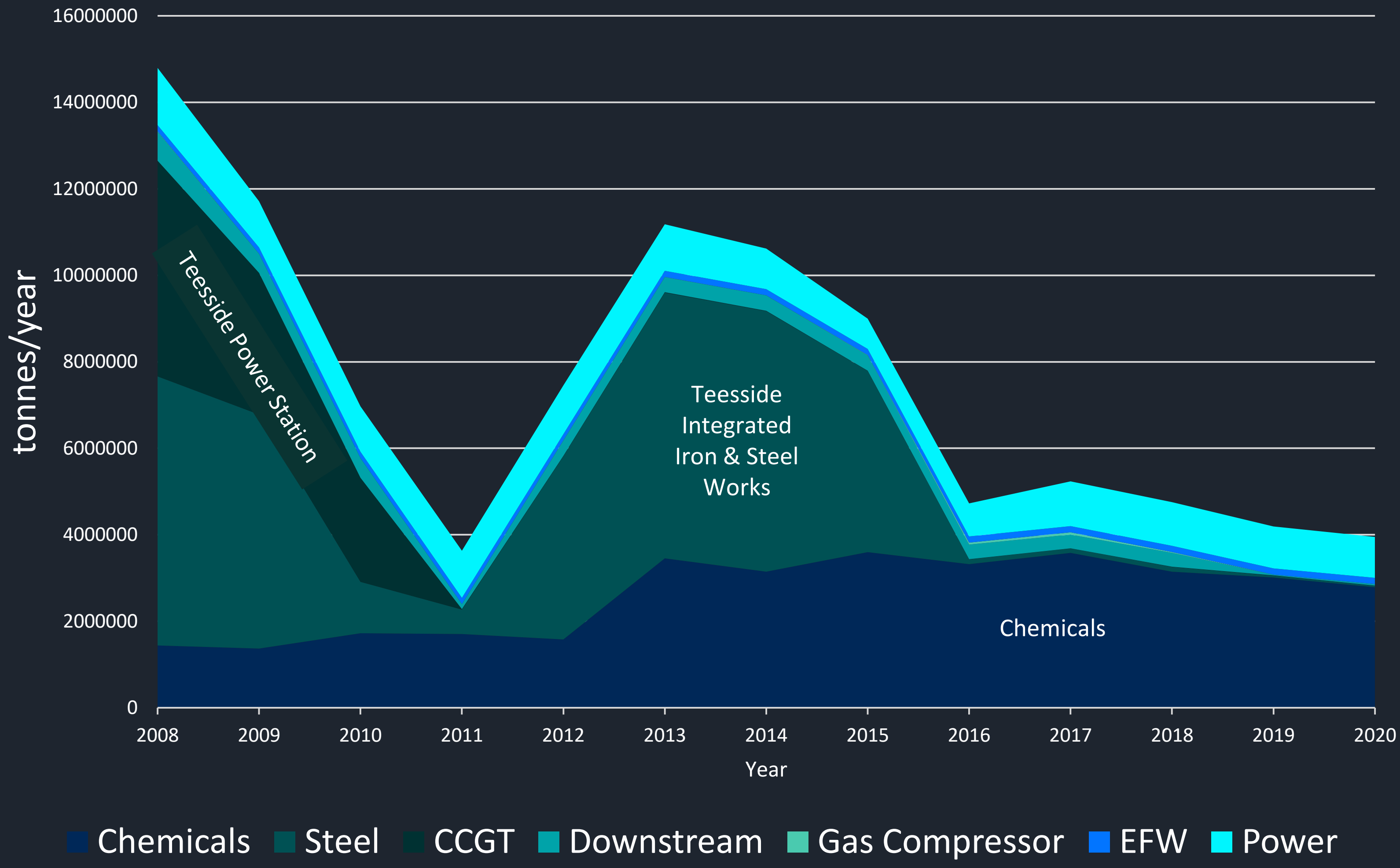
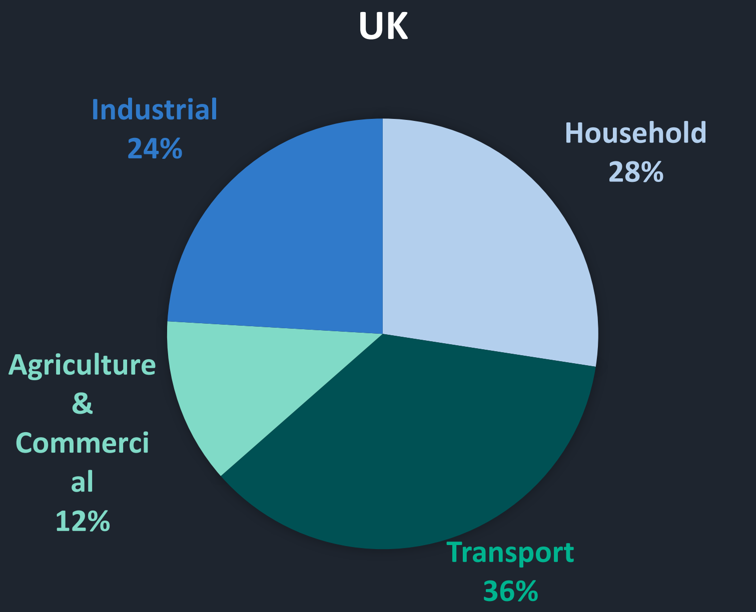
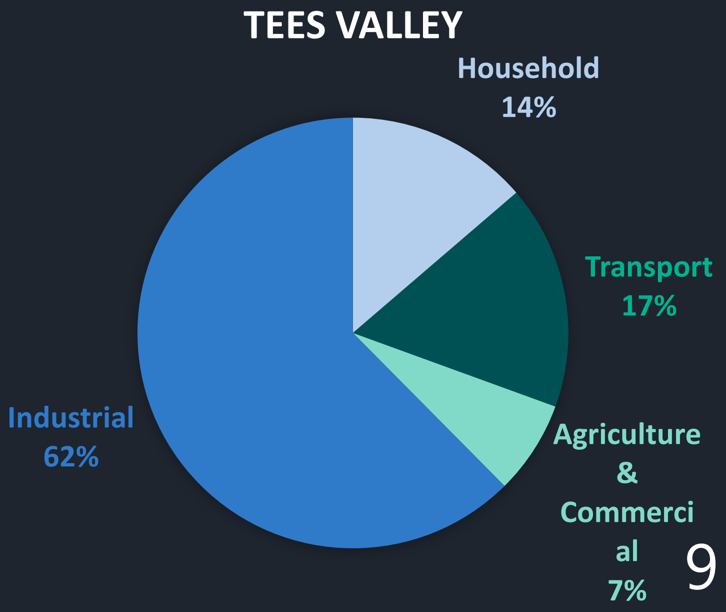
Historic Emissions







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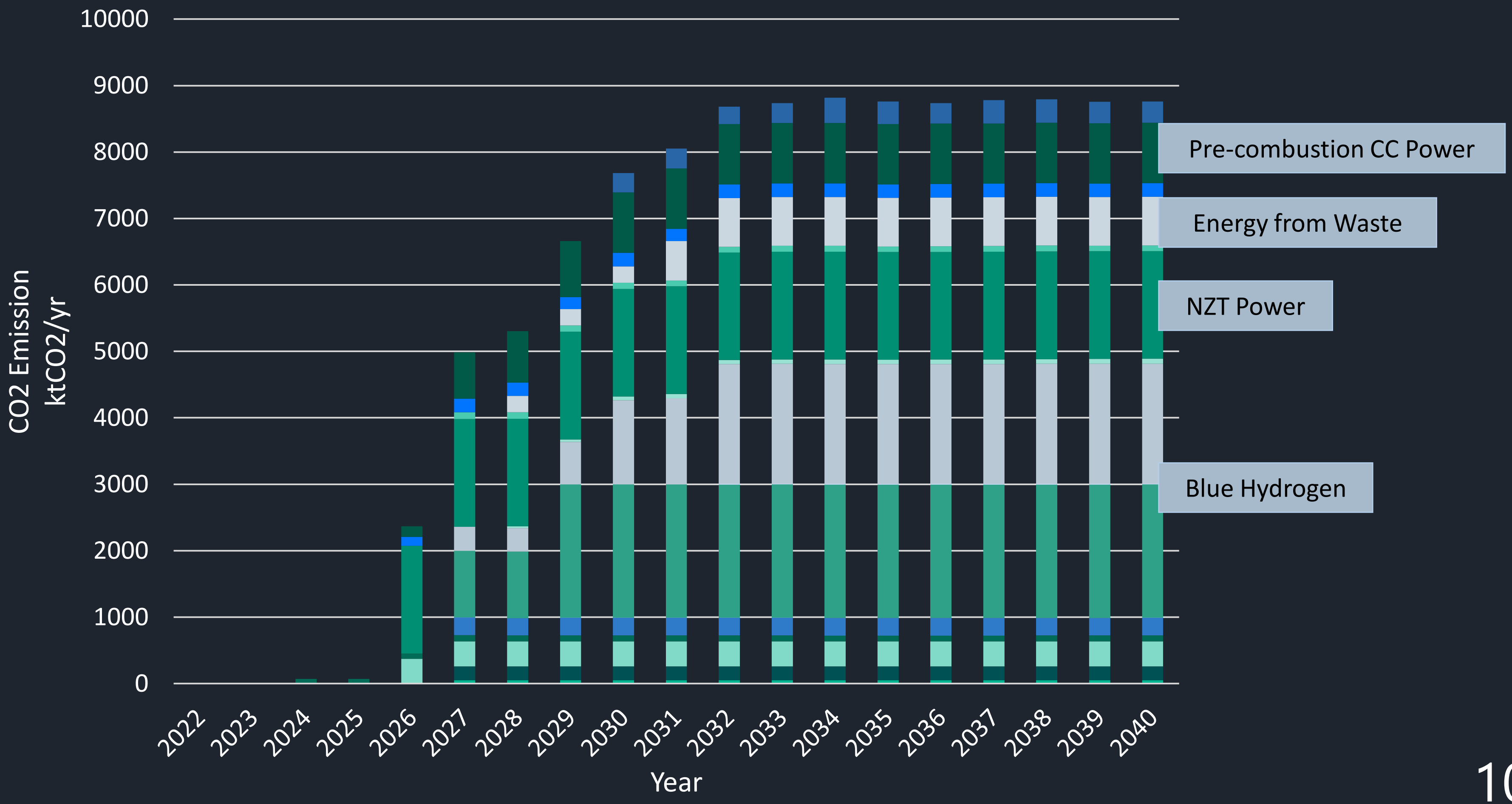
Potential Future Emissions

Scope 1 CO2 Captured = 8.4 MtCO2/yr



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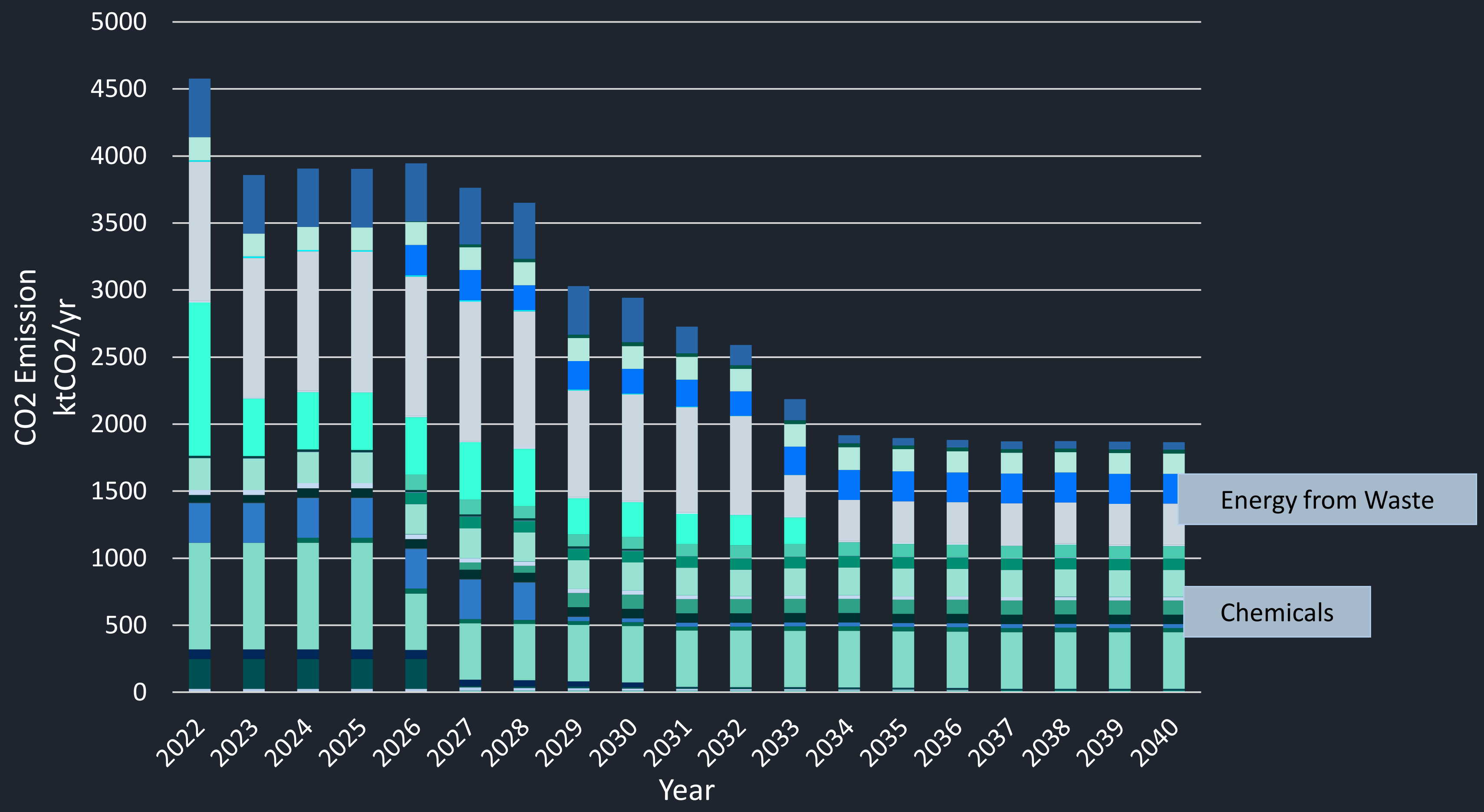
Potential Future Emissions

Scope 1 CO2 Residual Emission = 1.5 MtCO2/yr



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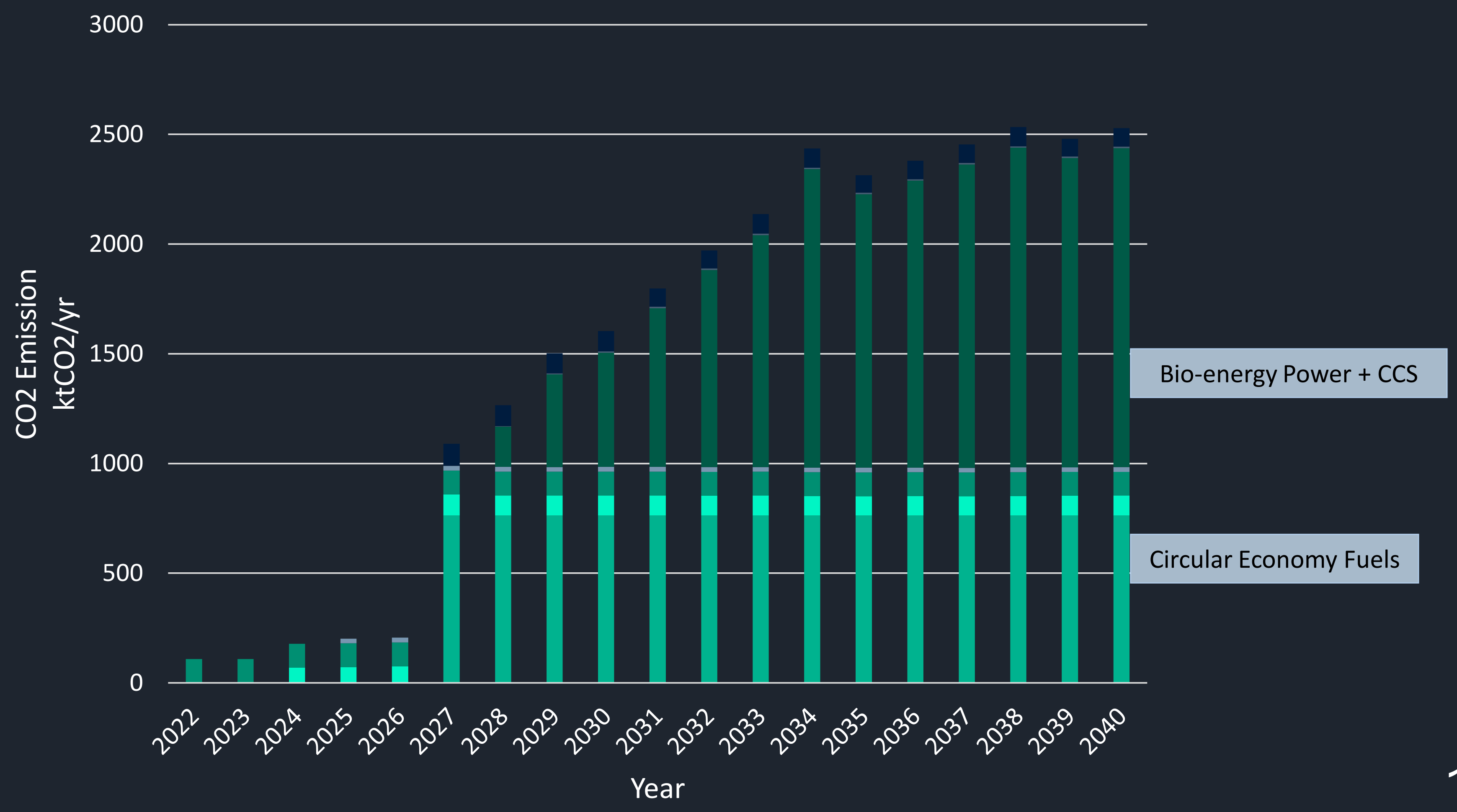
Potential Future Emissions

Biogenic CO2 Available for Capture = 2.7 MtCO2/yr



Net Zero - Dependencies

The balance shows:

- 16% residual emissions and dependency on negative emissions to offset these

To put this in context

- SBTi limits organisations' residual emissions to 10% (reduction = 90%)
- IEA's Net Zero Emissions Scenario reduces industrial CO_2 by 95%

Residual Emission and Negative Emissions are not created by the same organisations.

To achieve Net Zero in the Tees Valley Cluster we need:

(i) collaboration between different industrials
(ii) carbon accounting – to understand where our emissions lie
(iii) a sense of shared purpose

Economic Benefits

Decarbonisation technologies provide:

New Investment

- Over £10 billion already identified

Limited Policy On

- 8,500 additional jobs
- £14.7 billion additional GVA (2022-2040)

Full Policy On

- 30,000 additional jobs
- £34.6 billion additional GVA (2022-2040)

The role of green fuels

A route to Net Zero…

Net Zero Teesside
10 MtCO2/yr

Fossil Fuel Derived CO_2
Scope 1
Emissions Captured

8.4 MtCO2/yr

Biogenic Derived CO_2
Non-Scope 1
Emissions Captured

1.6 MtCO2/yr

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