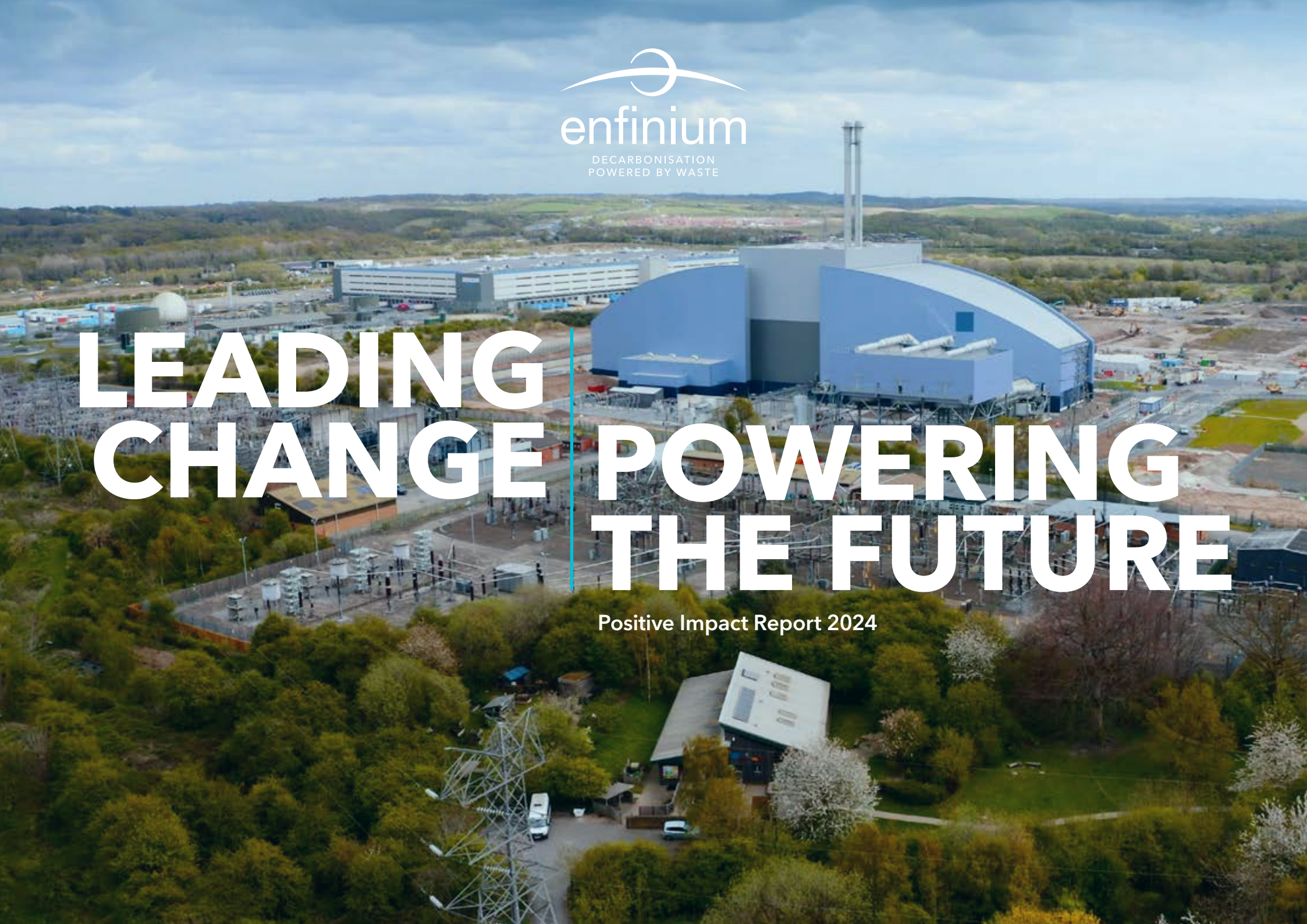

enfinium
DECARBONISATION
POWERED BY WASTE
LEADING CHANGE
POWERING THE FUTURE
Positive Impact Report 2024

A decarbonisation business, powered by waste

enfinium is a leading Energy from Waste (EfW) owner, operator, and developer with six plants, two of which are under construction. We work diligently to recover waste through the energy and heat we generate and the circular products we produce. Our vision is to transform our sites into decarbonisation hubs and carbon capture units, generating carbon removals that enable a systemic pursuit of net zero.

This report outlines our Governance, People, Environmental and Community strategies, policies and progress. All emissions data has been independently verified by Trident Utilities.

Useful links

Net Zero Transition Plan Report

Cover image: Skelton Grange EfW
This image: Parc Adfer EfW with conceptual image of CCS

Contents

INTRODUCTION

1

Chair Foreword

"The business continues to be an innovator and leader in the roll-out of new decarbonisation technologies for the energy from waste sector."

Sir Peter Gershon
Chair

At a time when leading world economies are resetting the way they interact and amidst the economic and geopolitical volatility we have seen over the past year, it is easy to become distracted from the long-term goal of decarbonising the economy and building sustainable businesses. However, safeguarding the planet's resources, minimising our impact on nature and the environment and protecting the health, safety and welfare of our people and communities must remain guiding principles for business.

That is why I am pleased to see enfinium's continued commitment to and investment in sustainability reflected in this report. 2024 was a landmark year for the business with three years of development investment and strategic review culminating in the launch of our Net Zero Transition Plan in the iconic surrounds of Battersea Power Station last May. It has been very encouraging to see this bold vision begin the journey to reality with notable highlights being the deployment of the UK's first carbon capture pilot plant at an energy from waste facility at Ferrybridge in September and the Parc Adfer carbon capture project moving successfully through to the final selection stage of the Government's Track 1 expansion process for the HyNet Carbon Capture, Utilisation and Storage (CCUS) cluster.

In terms of broader environmental performance, 2024 reflected an excellent year with each of enfinium's facilities recording the highest 'Band A' rating for emissions management providing reassurance to local communities that environmental impact is managed to the best possible standards. In addition, the roll out of new ash residue disposal contracts and solutions developed during the year will take the business even closer to our target of 100% recycling and recovery of metals and ash at every plant.

enfinium's community relations and investment programme continued to flourish with the national Repair Café fund supporting many new and existing repair, recycling and reuse centres with their circular economy work. Community and charity funding and volunteering by our teams also delivered valuable support and some fantastic outcomes in all our local communities. It is extremely important that each of our businesses is a good neighbour as well as being a source of local economic growth and skilled jobs for the future.

My role as Chair is to ensure sustainability is embedded in our governance. It flows through all our committees and is discussed in depth at Board level through the Finance, Risk and Audit and Health, Safety and Environment committees. As the Board has travelled around the country over the last year visiting each of our operating facilities and construction sites, it has been encouraging to hear first-hand from our staff how their efforts are making a positive impact and many of those projects and initiatives are highlighted in this report.

The way the business is delivering its sustainability strategy is through a relentless focus on outcomes and a more agile, innovation-led, culture. The business continues to be an innovator and leader in the roll-out of new decarbonisation technologies for the energy from waste sector, such as CCUS, and in the development of heat networks, which are another way that enfinium's operations can further contribute to local communities and support decarbonisation outside of the business's own operations.

I would like to thank all employees at enfinium and our investors, partners, customers and suppliers for their continued efforts to advance the business's ambitious goals in sustainability and I look forward to seeing their positive impact continue in the years to come.

Sir Peter Gershon
Chair

Chief Executive Officer Foreword

This year, enfinium has continued to make strong progress on our sustainability commitments. I am proud of the achievements of our team, the commitment they show and the innovative approach we take to addressing our environmental impact.

Sustainability is at the core of our business and our sustainability strategy is deeply interlinked with our business strategy. Through our operations last year, we diverted over 2.3 million tonnes of unrecyclable waste from landfill, resulting in 559,816 tonnes of CO_2e avoided emissions. In doing so, we were able to recover precious resources including energy, enough to power 500,000 homes, and other valuable materials including ferrous and non-ferrous metals.

However, myself and the team recognise that this alone is not enough. This is why we remain committed to ensuring the highest sustainability standards in all aspects of our operations, including reducing our Scope 1, 2 and 3 emissions, improving air and water quality, and promoting biodiversity across our facilities.

It is also why we have ambitious plans for the future of the business to transform our sites into local decarbonisation hubs that maximise the climate value of our operations by removing CO_2 from the atmosphere, contributing heat to the local economy, while recovering electricity from society's unrecyclable waste that would otherwise go to landfill. I was pleased to see the significant progress we have made this year in many areas of our sustainability strategy.

Post the fatality caused by injuries sustained by a visiting driver at our Kemsley facility in December 2023 we continue to proactively work with the Health and Safety Executive's investigation into this tragic incident. Ensuring zero harm is our top priority and we have renewed our focus on our Safety on Purpose programme across the organisation over the past year.

Yet we are always focused on the future. In the Net Zero Transition Plan we announced last year, we set out how we will go beyond achieving net zero across our operations but go carbon negative by generating durable carbon removals at scale using Carbon Capture, Usage and Storage (CCUS) technology, taking CO_2 out of the atmosphere. This year, we have made considerable progress towards this end, Parc Adfer passed the feasibility assessment for the Government's Track-1 Expansion CCUS programme, we launched our CCUS pilot programme, which we have since expanded to include trialling next generation technology, and the planning and consenting process is advancing for our largest facilities, Ferrybridge 1 & 2.

Outside of our day-to-day operations, we have also made significant progress in the construction of our two new facilities, Skelton Grange in Leeds and Kelvin in West Bromwich. Skelton Grange is entering the final commissioning phases ahead of full operations later this year, and Kelvin will follow in 2026.

Taking us a step closer to our vision for modern decarbonisation hubs, work is underway to ensure that both of our new sites contribute to local heat networks in their respective areas, Skelton Grange for the Aire Valley Heat and Power Network and Kelvin for the West Bromwich Heat Network. With this advancement, these facilities will provide a reliable, long-term source of heat for the local communities in which they operate, supporting the decarbonisation of our neighbours.

There are still challenges ahead and a lot of work to do. Achieving net zero, in every area of our economy, will require both significant investment and the co-ordinated effort of many stakeholders across the value chain to ensure a smooth transition that works for all.

This means that we must collaborate to achieve our aims. I would like to reaffirm the words of our Chair and thank everyone at enfinium for their continued efforts in support of our sustainability goals. I would also like to thank our customers and partners for their continued contributions and support. With your continued support, together, we can work to achieve our collective vision.

Mike Maudsley
Chief Executive Officer

> We have made considerable progress, Parc Adfer passed the feasibility assessment for the Government's Track-1 Expansion CCUS programme, we launched our CCUS pilot programme, which we have since expanded to include trialling next generation technology, and the planning and consenting process is advancing for our largest facilities, Ferrybridge 1 & 2."

Mike Maudsley
Chief Executive Officer

We are enfinium

Our Purpose

Our primary purpose is the safe, reliable, sanitary disposal of waste for society.

Our Vision

Decarbonisation, powered by waste.

Our Aims

1. **Be the operational partner of choice, for waste and energy**
2. **Leverage carbon capture technology to become a carbon removals business**
3. **Evolve our EfW plants into decarbonisation hubs, facilitating the UK's Net Zero transition**

6 Facilities

4 in operation | 2 under construction


FERRYBRIDGE 1


FERRYBRIDGE 2


KEMSLEY


PARC ADFER


KELVIN


SKELTON GRANGE

2.3m tonnes
of unrecyclable waste to energy

265 MW
gross electrical generation

Over 500,000
homes and businesses supplied equivalent

2nd largest operator
in the UK by 2026

330
full-time employees

Total GHG emissions of **1,071,252** tCO_2e

Scope 1 emissions of **992,589** tCO_2e

Scope 2 emissions of **0** tCO_2e

Scope 3 emissions of **78,663** tCO_2e

Our Values

- MAKE A POSITIVE IMPACT
- ONE TEAM
- PRIDE MATTERS
- SAFETY ON PURPOSE
- TAKE OWNERSHIP

Award winners

IJGlobal ESG AWARDS 2024 — 2024 WINNER

bionet Awards 2024 — 2024 WINNER

The enfinium fleet can process up to 2.3m tonnes per annum of unrecyclable waste and up to 265MW of gross electrical generation.

Our Facilities

enfinium operates four UK-based Energy from Waste (EfW) facilities, with c.265MWe and c.2.3m tonnes of waste processing capacity, with a further two EfW facilities under construction. Our Skelton Grange facility is due to open in 2025 and is featured on page 39.

OPERATIONAL

1 Parc Adfer

232,000 tonnes per annum

21 MWe (gross)

UNDER CONSTRUCTION

2 Kelvin

395,000 tonnes per annum

44 MWe (gross)

Sandwell Council: West Bromwich Heat Network (in development)

UNDER CONSTRUCTION

3 Skelton Grange

410,000 tonnes per annum

49 MWe (gross)

SSE Energy Solutions: Aire Valley Heat Network (in development)

OPERATIONAL

4 Ferrybridge 1

725,000 tonnes per annum

85 MWe (gross)

OPERATIONAL

5 Ferrybridge 2

725,000 tonnes per annum

85 MWe (gross)

OPERATIONAL

6 Kemsley

657,000 tonnes per annum

74 MWe (gross)

Provides steam to DS Paper Mill

CORPORATE OFFICE

7 London

2.3m and 265MW are for our four operational facilities; Ferrybridge 1, 2, Kemsley and Parc Adfer and excludes Skelton Grange and Kelvin.

Engaging our Stakeholders

Cleaner waste is a vision that affects us all. As a decarbonisation business powered by waste, enfinium form part of a system of change. Each stakeholder plays a vital role, enabling more sustainable lives and economic opportunities, from policymaking to communities, waste management, to processing and re-use.

As regulations and markets evolve, customer needs shift and significant opportunities arise.

A unified approach results in purposeful work, stronger businesses and better outcomes for customers and policymakers. A win for our investors; a win for our employees; and a win for society.

During 2024, our stakeholders raised the following materiality topics:

- **Anti-bribery and corruption**
- **Climate risk**
- **Customer advocacy**
- **Cybersecurity**
- **Employee engagement**
- **Employee training**
- **Inclusion**
- **Net zero governance**
- **Net zero transition planning**
- **Procurement policy**

Our Executive Committee members are each specifically aligned to our six primary stakeholders:

BUSINESS DEVELOPERS

Paul Green
Vice President
Business Development

How we engage
We work with partners, suppliers, and other third parties to build strong relationships to develop projects of the future.

EMPLOYEES

Tom Darby
Chief People Officer

How we engage
Our colleagues' voices are heard through our annual Employee Experience Survey, town hall meetings, leadership summits and our whistleblowing platform. We like to create opportunities through different forums to bring our people together to add value and add their voice.

INVESTORS

Jenny Harrison
Chief Financial Officer

How we engage
We run onsite lender and investor days to showcase our strategies and technology, host virtual and in-person meetings and welcome our investors at industry conferences. We invite proactive dialogue between investors and our senior leadership team.

COMMUNITIES

Dr. Jane Atkinson CBE
Chief Operations Officer

How we engage
We regularly engage with non-governmental organisations, charities and civil society groups both directly through our community liaison meetings and through cross-industry forums. We also operate a community hotline at our two construction sites.

CUSTOMERS, REGULATORS & GOVERNMENT

Wayne Robertson
Chief Commercial
& Strategy Officer

How we engage
Our customer's voices are heard through our everyday interactions, customer surveys, social media, industry networking and forums.
We engage proactively with local and national regulators and policymakers.

SUPPLIERS

Simon Forshaw
Vice President,
Engineering & Construction

How we engage
Our code of conduct sets out our expectations and the minimum standards we expect from our suppliers on the environment, diversity and human rights. We directly engage with suppliers to understand and advance their sustainability plans.

2024: An Exceptional Year of Policy, Market Activity and Political Change

2024 has been a tremendous year of change, challenge and opportunity for our industry, for politics, our economy and society. At enfinium, we are quick to consult, mitigate and act, staying ahead of regulation and leading with innovation.

We have summarised some of the key external events of 2024 below.

4th March
UN warns of 56% rise in waste volumes by 2050 without 'urgent action'

19th March
NESO release their UK Energy vision: Beyond 2030

16th May
National Infrastructure Commission Progress Review 2024

20th May
Implementation update on UK Sustainability Disclosure Requirements

23rd May
UK ETS Authority confirms EfW sector inclusion in 2028

2024 ▸ JANUARY | FEBRUARY | MARCH | APRIL | MAY | JUNE | JULY

2nd February
UK carbon price falls to record low

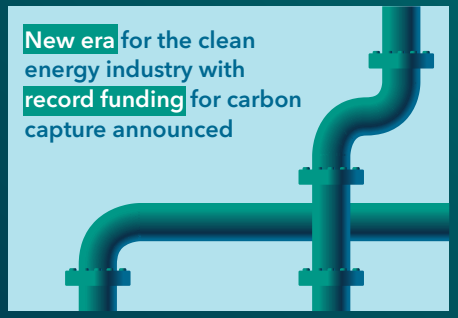
29th April
Joint policy statement on a UK-wide Deposit Return Scheme

4th July
Labour Party secures majority in UK general election

9th July
Boost for new National Wealth Fund to unlock private investment

18th July
Climate Change Committee 2024 Progress Report to Parliament

4th October
UK Government confirms £21.7 bn CCUS funding for 2 industrial clusters



10th October
Bloomberg ranks EfW as a priority for CCUS

23rd October
Households dumped 5.6 million tonnes of packaging last year

26th October
Climate Change Committee advises 81% reduction in emissions by 2035

10th December
Contracts signed for UK's first carbon capture projects in Teesside

12th December
DEFRA launch Circular Economy Taskforce

13th December
UK Government Clean Power 2030 Action Plan

30th December
DEFRA publishes Residual Waste Infrastructure Capacity Note

AUGUST | SEPTEMBER | OCTOBER | NOVEMBER | DECEMBER

3rd September
UK's methane hotspots include landfills and last coalmine

30th September
Closure of last remaining UK coal fired power station

8th November
Decarbonisation plans for Kemsley Industrial Cluster

15th November
UK Government publishes principles for voluntary carbon and nature market integrity

19th November
Welsh Government decides not to join UK Deposit Return Scheme

29th November
Policy update on Simpler Recycling in England

How will these events affect enfinium in 2025 and beyond?

The relationships between businesses, our environment and society are changing. Rather than resisting change, our policy is to grow toward net zero in close partnership with our stakeholders. In adopting this stance, we view many of the incoming regulatory changes as opportunities, rather than threats.

2024: Our Key Achievements this Year

In many respects, 2024 has been a landmark year for enfinium. We undertook our first major Research & Development (R&D) project into carbon reduction. We made strong progress in reducing our emissions, across Scopes 1, 2 and 3. Our construction projects reached major milestones. And our business reached an important milestone of three years, following the 2021 merger of Wheelabrator UK and Multifuel Energy Limited. Here are some of our highlights, month-by-month.

2024 ▸ JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY

19th January
Ferrybridge donates £50,000 to new Brotherton children's playpark

14th March
enfinium launches community-based Repair Cafés support fund

19th March
enfinium announces UK's first energy from waste carbon capture pilot

1st May
enfinium announces plans to deliver 1.2 million tonnes of carbon removals across the UK

22nd May
enfinium commissions Oxford Institute for Energy Studies research paper assessing the potential to decarbonise the UK EfW sector using CCUS

8th July
enfinium welcomes first rail delivery of waste to Yorkshire facility

18th July
Refinancing of Parc Adfer completed with five local authorities in North Wales

26th February
Ferrybridge designated as 'Nationally Significant' by UK Government

11th April
enfinium announces proposal for £200m investment in carbon capture project in North Wales

25th April
Parc Adfer CCUS passes Eligibility Check

3rd June
3rd Birthday for enfinium

27th June
North Wales Wildlife Trust's award winning partnership with enfinium Parc Adfer

12th August
Skelton Grange site energised, connected to grid

2nd October
Parc Adfer CCUS bid passes "deliverability assessment"

3rd October
enfinium rolls out Carbon-14 measurement technology, progressing delivery of carbon removals

9th October
enfinium partners with Cognitive Business to trial best-in-class AI technology to improve plant efficiency

18th October
enfinium win coveted Environment Award for Net Zero Transition Plan

17th December
enfinium supports 15 repair cafés in the first year of its Repair Café Support Fund

31st December
enfinium awarded consistent A ratings from EA and NRW for 2024

AUGUST | SEPTEMBER | OCTOBER | NOVEMBER | DECEMBER

16th September
enfinium's UK-first carbon capture EfW pilot goes live

16th September
enfinium launches consultation on decarbonisation plans

7th November
enfinium partners with Wasteer to deploy innovative AI technology

The pages that follow explore many of these successes in detail. We are excited for the future and to reveal some of our plans for 2025 and beyond.

THE BIG PICTURE

This section summarises the key social, economic and political trends guiding our strategy. We'll outline the UK's net zero, energy and waste transitions, including key incoming regulations, dynamics, challenges and opportunities.

Useful links

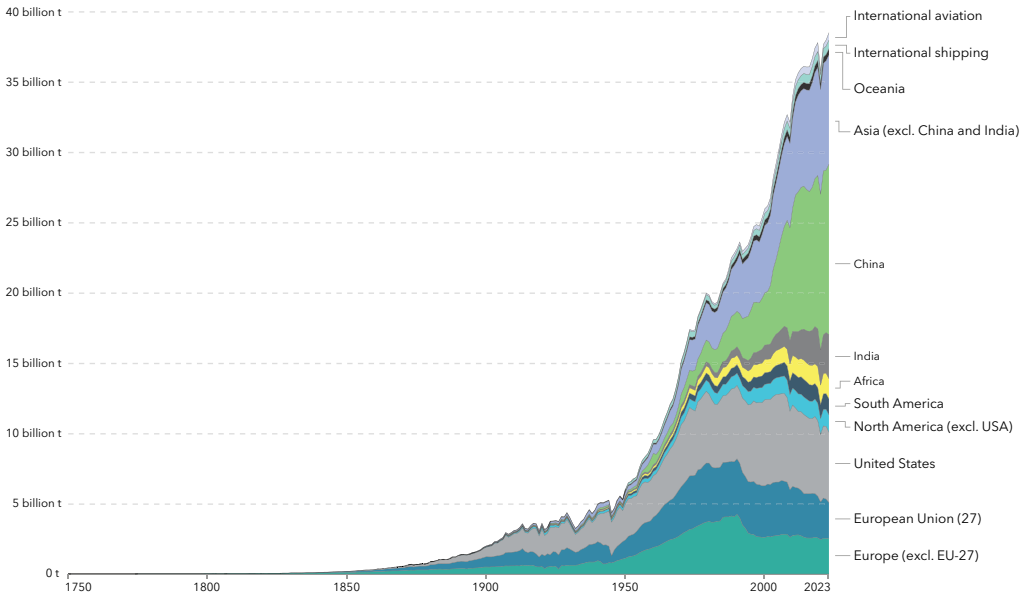
- Tolvik Consulting UK Energy from Waste Statistics – 2024
- enfinium Net Zero Transition Plan report

Global Emissions and Temperatures Continue to Rise

As carbon is integral to life on earth, many have questioned how increasing carbon dioxide (CO_2) emissions can cause such catastrophic heating. However, science shows us that if it were not for human activity, the world would have naturally cooled during the 20th century.

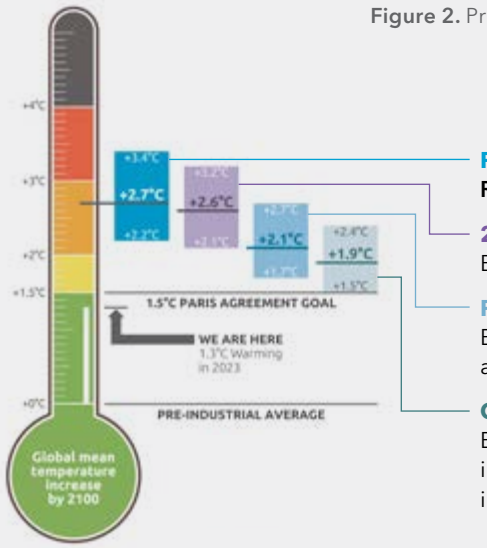
CO_2 remains in the atmosphere for many hundreds of years. And, as human emissions are additional to natural phenomena, an exponential effect occurs, threatening vital tipping points, with devastating impact on our economy, society and ecology. As shown in Figure 1, global emissions continue to increase year-on-year, increasing the need for technological solutions, such as CCUS.

Figure 1. Annual carbon dioxide (CO_2) emissions by region[1]



Emissions from fossil fuels, industry, as well as international aviation and shipping are included as separate entities. Land-use change, deforestation, soils, or vegetation are excluded.

Figure 2. Projected global temperature increase by 2100[2]



Policies & action
Real world action based on current policies

2030 targets only
Based on 2030 NDC targets[3 4]

Pledges & targets
Based on 2030 NDC targets[4] and submitted and binding long-term targets

Optimistic scenario
Best case scenario and assumes full implementation of all **announced** targets including net zero targets, LTSs and NDCs[4]

A Global Effort

Net Zero is a global goal, requiring a seismic shift by all major economies and large organisations. Though, despite 29 editions of the Conference of Parties (COP), annual emissions continue to rise. As per the UN's latest 'Emission Gap' report, current government policies, conventional energy demand, clean technology adoption and wider consumption patterns are not aligned with the Paris Accord goal of 2°C above pre-industrial levels and depend on carbon capture.

Efforts to limit temperature rises to 1.5°C appear to have failed (see Figure 2), as 2024 marked the world's first year-long breach of this important threshold. As time progresses, urgency, risks and costs increase. Near-term action is therefore essential as is our rapid progression of carbon capture technology.

At present, there are 45 active CCUS plants globally, storing c.50Mt of carbon. However, whilst technology, processes and systems are maturing, the number and scale of CCUS projects is significantly lower than net-zero targets demand.

1 Global Carbon Budget 2024.
2 Climate Action Tracker global warming projections, November 2024.
3 Temperatures continue to rise after 2100.
4 If 2030 NDC targets are weaker than projected emissions levels under policies & action, we use levels from policy & action.

Net Zero Defines our Customer Needs

Decarbonising our Future

enfinium is fully aligned to the pursuit of net zero, both as an unparalleled source of innovation and as a strategic imperative for our stakeholders. We are well-positioned to act, playing a vital role in avoiding catastrophic climate change and assisting the UK in reaching its legal commitment to net zero by 2050.

The UK's energy transition has been pivotal in its 54% reduction of CO_2e emissions since the reference year of 1990. However, as the economy stumbles and low hanging fruit are taken, the need to correlate net zero with emboldened investment and leadership has never been greater.

As climate risks escalate, our window for mitigation is firmly in the present, however, we must increasingly seek adaptations toward warmer, wetter and more unsettled future. Adaptation favours those with the broadest shoulders and so we must be conscious of a just transition, as our business serves all of society. For enfinium, this means standing alongside our employees, customers, suppliers and communities and taking collective action where needed.

Herein lies our greatest challenge. So often, the uncertainty typified by net zero, leads to inaction. However, inaction is not a strategy for success. Net zero offers as much for our economy and business as it does for our society. The UK waste market is relatively unique, in that it acts as a platform for industry-wide collaboration for collective benefit.

One such opportunity enfinium is well-positioned to address is CCUS. The UK's Climate Change Committee (CCC) have highlighted that net zero is unlikely to be achieved without it, as is the case globally. This report details our carbon removals strategies (page 41) and progress (pages 81 and 82), including our Waste Industrial Carbon Capture (ICC) bid at Parc Adfer and pioneering carbon capture pilot project at Ferrybridge.

Carbon capture is especially important to waste, as the sector is classified as 'hard to abate'; for example, one that cannot be easily electrified.

Net Zero Defines our Customer Needs

Faced by increasing regulatory pressure and climate emergency declarations among over 300 of England and Wales' 339 local authorities, our customers' own net zero plans are shaping the direction of enfinium's contracts and alliances. Our business is rising to the challenge proactively and collaboratively, to secure its long-term future in the decarbonisation of waste. This positioning opens many opportunities for growth. For example, in exploring novel uses of our circular products, APCr and IBA. And novel uses of the power and heat we generate.

See page 80 for further innovations.

The UK's energy transition has been pivotal in its

54% reduction

of CO_2e emissions since the reference year of 1990

Carbon Brief, 2025

Image: Ferrybridge CCUS pilot investor day

Image: Ferrybridge 1 CCS pilot plant

The UK's Waste Problem is Far Greater than Official Projections Suggest

Officially, the sectors of waste and energy account for around one quarter of all UK emissions. However, the embodied carbon in wasted products, including food waste, make this figure considerably higher, especially when factoring in imported goods. Consider for example that food waste is forecast to account for 8% of UK emissions alone. In construction, as much as one third of a project's embodied carbon is attributed to waste. And, in 2017, the carbon dioxide emissions from the UK's plastic packaging exports alone were equivalent to those of 45,000 cars[5].

Focusing solely on the direct emissions from waste management activities (around 6%) significantly underestimates the total climate impact associated with the UK's consumption and waste habits. Addressing these areas through waste reduction, increased recycling, more sustainable consumption patterns, and policies like the upcoming Carbon Border Adjustment Mechanism (CBAM) are crucial for the UK to achieve its net-zero targets.

However, our own forecasts for waste remain above government aims, as there is simply not enough funding in place to secure the scale of culture and behaviour change required.

Despite the scale of the challenge, enfinium are adopting a unified approach to the waste crisis, through its current EfW and recovery operations and through its alignment to carbon reduction and removal.

In 2017, the carbon dioxide emissions from the UK's plastic packaging exports alone were equivalent to those of

45,000 cars

5 Policy Connect, UK must aim for net zero plastic waste exports by 2030, finds report - Climate Action" Source: BBC, 2019.

The UK Energy Transition

Energy supply has been perhaps the UK's greatest net zero success story. In just 20 years, UK energy has undergone an incredible transition, from c.5.8% renewable energy in 2004, to over 58% in 2024[6].

The 'energy trilemma'

The energy trilemma is at the heart of the UK's energy transition. This most fundamental concept in energy supply, determines that clean energy alone is not sufficient. As demonstrated by geopolitical events and corresponding cost-of-living crises, it must also be affordable and secure.

The falling cost of renewables and advancements in clean technologies are accelerating adoption, with 95% of electricity targeted to come from low-carbon sources by 2030.

This poses both an opportunity and risk for our business. As the green energy mix increases, our avoided emissions reduce. However, new opportunities also present themselves, in the form of recovered heat supplied via direct connection to neighbouring industrial partners and communities.

Dispatchable spinning generation

We provide kinetic energy to maintain grid resilience, security, and stability. Kinetic energy is required by the National Grid to maintain the right grid frequency, typically around 50 hertz as well as grid stability, created by spinning turbines like those within our energy from waste facilities close to major population centres. This kinetic energy cannot be supplied by wind turbines or solar panels. A lack of kinetic energy on a grid can lead to oscillations which could cause chain reactions including blackouts.

Energy Demand

Energy demand is experiencing a similar transformation. As our population grows and society becomes increasingly electrified, grid investments will need to grow alongside energy demand to enable electrification throughout our society. So much so, that electricity is a key inhibitor to many green technologies, from the cars we drive, to the AI data centres of the future.

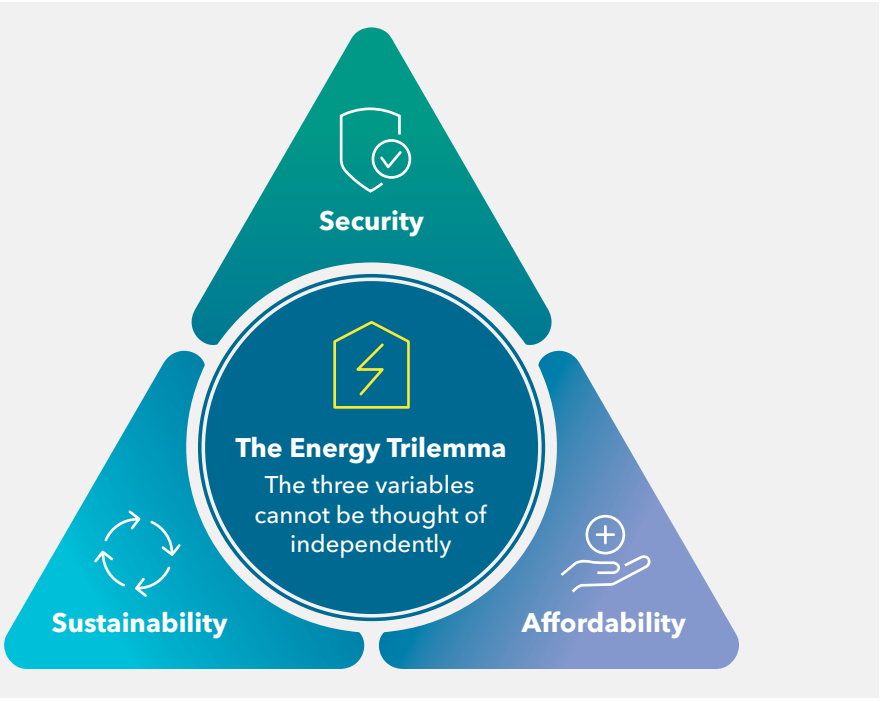
Energy from Waste: Energy Production

Energy from Waste (EfW) plays a small, but important and distinctive role in the energy transition. According to Tolvik, in 2024, UK EfW facilities generated a total of 10,040 GWh of electricity and 1,949 GWh of heat: approximately 3.6% of the total net UK power generation for the year, which was 279,156 GWh[6]. These figures are forecast to further increase, as additional EfW facilities go live and direct connections to heat demand become more widespread.

enfinium operate one of the most modern, energy efficient EfW fleets in the UK, playing an important role in the UK's environmental infrastructure. However, we do not shy away from the fact that EfW generates substantial CO_2e emissions.

Our primary purpose is the safe, reliable, sanitary disposal of waste for society. The energy we generate offers an important source of waste recovery, leading to a net saving of emissions through re-use and diversion from landfill. Furthermore, significant progress is being made in reducing fossil content of residual waste, offering hope that emissions will continue to reduce into the future, alongside our plans for carbon removals.

What is especially interesting about EfW, is its suitability to direct supply, whether private wire, or for example, via heat supplied to neighbouring industrial partners and heat networks. This topic is central to our strategy and is explored further on pages 43 and 44.



6 Tolvik, UK Energy from Waste Statistics 2024, May 2025.

UK Waste Market Overview

enfinium operates in an attractive UK market with a growth trajectory promoted by favourable regulatory trends and structural capacity gaps, providing long-term security of supply.

The UK is the world's sixth largest economy, generating between 191 and 215 million tonnes of material waste each year, averaging three tonnes per capita (including construction).

An Inconvenient Truth

Waste is directly correlated with consumption, which in turn generates economic activity. In an age of fast fashion and low-cost TVs, product durability has declined. In turn, items that lasted for years, now last for months. This disposable culture has endured the cost-of-living crisis and, despite global events, appears here to stay, at least in the near-term.

Energy from Waste: Waste Processing

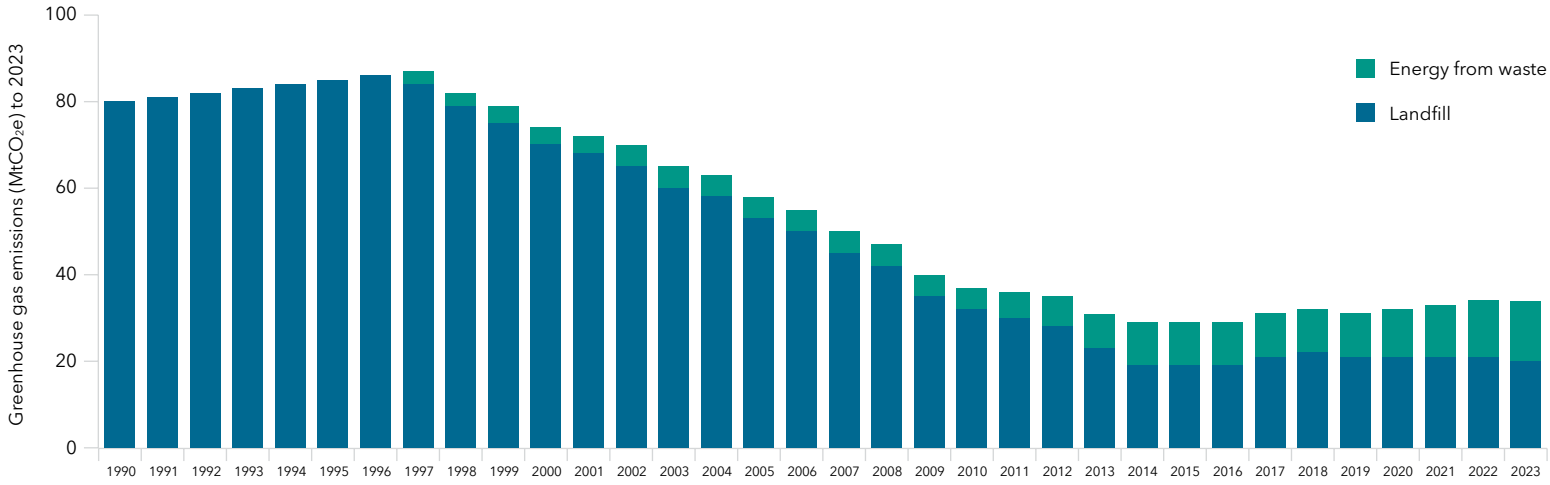
EfW plants are designed and licensed to take residual waste only; deemed as the proportion of waste that cannot be easily recycled.

Permitted EfW capacity is built around the assumption that waste volumes will indeed reduce. However, there is little sign of this at present.

Despite ambitious government plans to halve waste by 2042 and reduce waste by 29% before 2028, residual waste volumes have remained broadly static for many years, declining by just 1.3% from 32.3Mt in 2019 to 31.9Mt in 2022, of which c.54% was processed by EfW plants[7].

As landfill phases down, the volume of residual waste processed by EfWs has grown rapidly in the UK, from c.5Mt in 2010 to 16.82Mt in 2024, an increase of 4.3% vs. 2023 (figure 3). The total number of UK EfW plants is 63, with a further 13 under construction[7].

Figure 3. Greenhouse Gas Emissions Arising from Landfill and Energy from Waste[8]



7 Tolvik, UK Energy from Waste Statistics 2024, May 2025.
8 Climate Change Commission

A Dynamic and Resilient Market with Maturing Capacity

EfW Market Forecast

As volume continues to shift from landfill to EfW, waste supply forecasts remain resilient over the next two decades. By 2035, EfW plants will be capable of dealing with 18.8 million tonnes of residual waste, slightly ahead of the 17.6 million tonnes government reforms target by 2042[9]. However, delivering the full extent of these ambitions is unlikely. Whilst we are in strong support of reforms, they have historically proven hard to deliver without more significant investment and behavioural change.

Approaching Market Capacity

As the number of UK EfWs reaches maturity, new availability must align to areas of unmet demand, such as London, the Southeast and East of England, where population growth rates are highest.

In December 2024, the UK government re-iterated its commitment to ensuring all future EfW facilities are CCUS enabled[10]. Again, we see this as a hugely positive development, as outlined in our CCUS Strategy (page 42) and 2024 update (page 80).

New EfW facility applications that do not align to net zero ambitions are unlikely to receive planning permission, or at the very least will face significant challenges. Our position as a decarbonisation business powered by waste enables us to move with the market, rather than against it.

Plastic Waste

Around half the waste we receive is biogenic, which is classed by the IPCC as carbon neutral. The other half is fossil-based, resulting in GHG emissions.

One of our greatest challenges as a decarbonisation business, is that residual waste presently contains a significant volume of plastic. When burnt, this plastic causes disproportionate and often unnecessary emissions, which are counter-productive, both for our business and society. For example, plastics can result in costly plant downtime and are highly calorific, reducing the quantity of waste we're able to burn at any one time. Furthermore, waste volumes are sufficient without the need to process plastics via EfW.

We are pleased to see several exciting technologies on the horizon, which are likely to reduce the harmful effects of plastics and our own emissions footprint. However, we remain concerned at the relative price of virgin plastic imports, relative to the cost of processing and recycling.

Until these macroeconomic forces change, the plastics problem will persist. In advocating for change, we must make clear that the systemic costs of inaction are greater than the cost of investment.

Image: Parc Adfer EfW

9 Tolvik, UK Energy from Waste Statistics 2024, May 2025.
10 DEFRA.

A Robust and Scalable Alternative to Landfill

Where does our waste come from?

The UK's waste is broadly categorised into Household (25.7m tonnes), Commercial & Industrial (33.6m tonnes), Construction and Demolition (64.2m tonnes)[11]. Of these, enfinium operates specifically in the areas of Household and Commercial waste, the mix of which is defined according to our customer contracts.

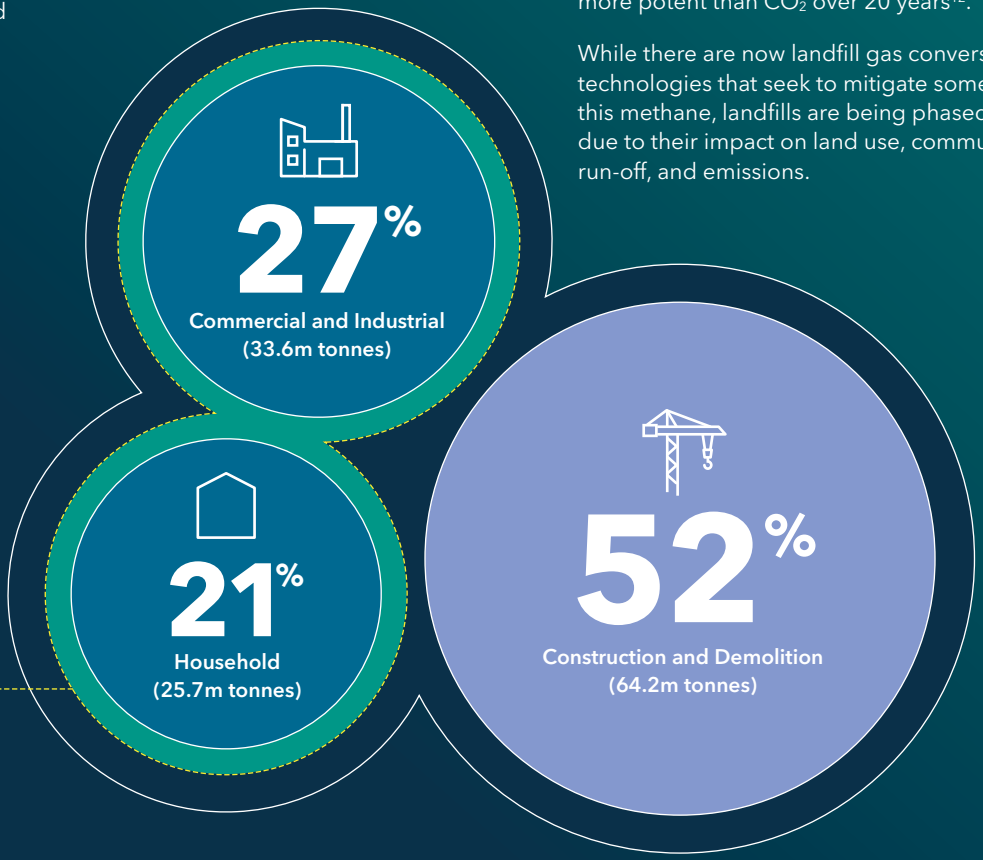
For example, our Parc Adfer facility is a public-private partnership, processing c.70% household waste from five local authorities in North Wales. Typically, residual waste comes from within an approximate 30-mile radius, whereby high haulage costs act as a natural barrier to waste mobility and transport emissions. However, 'waste by rail' may offer access to waste markets further afield in the future.

Our mix of six plants located in England and one in Wales reflects population density and waste supply, with 84% of UK household waste originating in England.

Residual waste available to enfinium:

16 million tonnes

of unrecyclable waste from household, commercial and industrial waste sectors



Transition from Landfill

When sent to landfill, biodegradable waste emits methane (CH4), a greenhouse gas with c.30x greater Global Warming Potential (GWP) than CO_2 over a 100-year period and ~80x more potent than CO_2 over 20 years[12].

While there are now landfill gas conversion technologies that seek to mitigate some of this methane, landfills are being phased down, due to their impact on land use, communities, run-off, and emissions.

By 2028, Defra is minded to the near elimination of biodegradable waste. By 2035, just 10% of UK waste will be destined for landfill, from an estimated 22% in 2024. Much of this capacity will transfer to EfW for processing and recovery, transformed into reliable homegrown energy and heat.

On average, EfW facilities are estimated to have saved around

375kg of CO_2 emissions

for each tonne of waste diverted from landfill[13].

UK-based EfW facilities also reduce the volume of waste sent for export, which have historically resulted in lower controls and unintended consequences for communities and the planet.

Of the remaining options, anaerobic digestion is a safe, reliable and practical technology for biogenic waste, though is niche and lacks scalability. There are also exciting though nascent biotech solutions, but these lack maturity, reliability, scale and safety.

Furthermore, landfill is classified as waste disposal, the least attractive option in the waste hierarchy.

11 Office for National Statistics (ONS), 2022.
12 US Environmental Protection Agency.
13 External consultant calculated emissions factor based on comparison between landfill and waste-to-energy emissions (0.375 tCO2e/t waste).

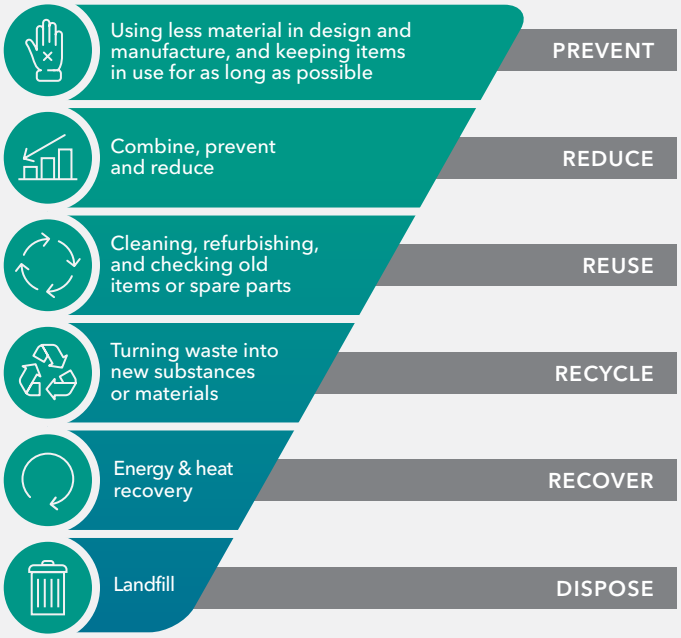
Image: Ferrybridge railhead

The Waste Hierarchy

UK policy is built around the waste hierarchy, prioritising waste reduction through prevention and preparing for reuse. Disposal is the least-desirable option.

Unlike waste incinerators without energy recovery and other less efficient EfW facilities within the UK, all enfinium facilities are classified as 'waste recovery' or R1, as our energy-efficient plants are Combined Heat and Power (CHP) enabled, ready to supply recovered heat directly to neighbouring communities. In addition, we recycle metals, residues and ash used for aggregates as by-products from our processes.

The Waste Hierarchy



Circular Economy and Recycling

The concept of the circular economy (figure 4) dovetails with the waste hierarchy and is central to our business and to the UK's pursuit of net zero.

In contrast to the 'take-make-waste' linear model, the circular economy determines, materials should be used and reused, repaired, and recycled for as long as possible; a principle that extends into the heart of all production and consumption activities.

In recent years, recycling rates have seen some improvement, however, as figure 5 shows, less than 50% of all waste is recycled in England, with Wales topping 55%. The large majority of our waste comes from England, where recycling rates have remained flat for some time. In 2023, the UK household waste recycling rate was 44.1%, a slight decrease from 44.6% in 2021, largely governed by England's performance, at 44.0%[14].

Figure 4. The concept of the circular economy

14 GOV.UK: UK statistics on waste to 2022 (published Sept 2024) and GOV.UK: Local authority collected waste management – Provisional annual results 2023/24 (published March 27, 2025).

Circularity reduces our dependence on newly created/virgin materials and enables an economy of waste recovery. While there will always be material that cannot be reused or recycled indefinitely, disposals should minimise environmental and societal harm at every opportunity; a concept to which enfinium fully subscribe. We have a financial incentive to do so. For example, in the waste we process, a lower calorific value, achieved by reducing plastic volumes, means the same boilers can process more waste, which is our primary source of revenue today.

In addition to minimising processing emissions, our EfW facilities interact with the circular economy in three main ways:

1. Recycled products

Like all EfWs, we recover aggregates used in our waste processing of three by-products from our processes, namely Incinerator Bottom Ash (IBA), Air Pollution Control residues (APCr), ferrous and non-ferrous metals.

At enfinium, 100% of IBA is recycled and reused in partnership with our suppliers. Furthermore, we are working to further transform APCr from a 76% recycling rate today to 100% by 2030.

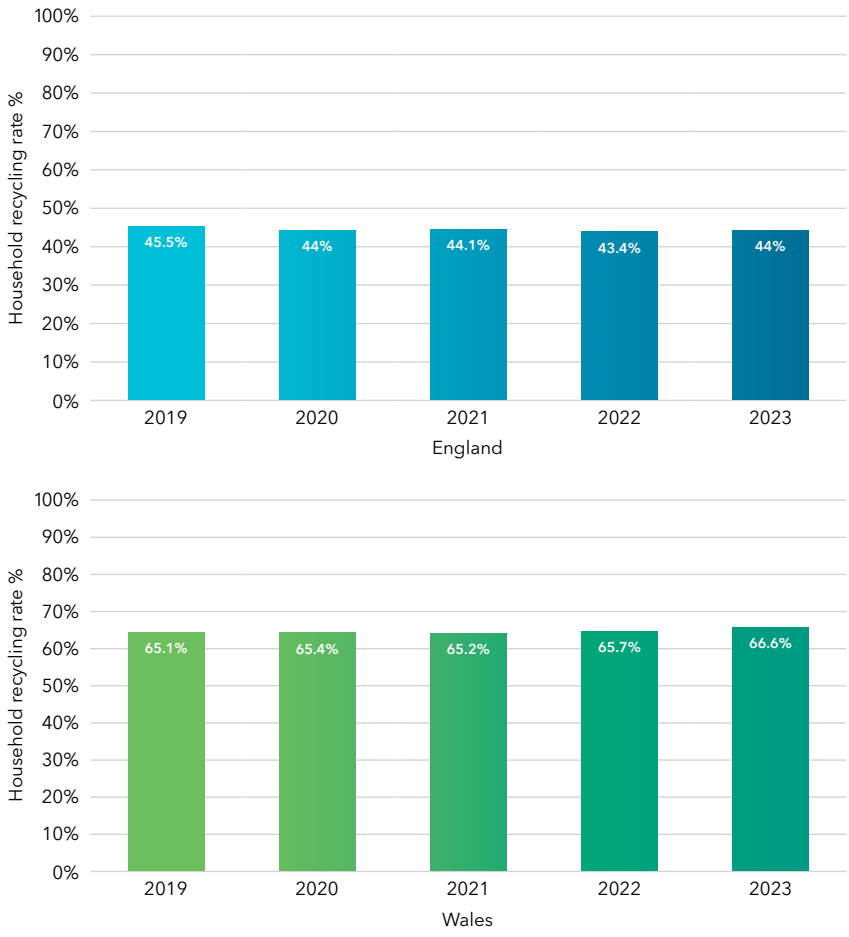
2. Capturing CO_2 emissions

Reusing and storing carbon is a central theme of our strategy and one that is core to the delivery of UK Net Zero. In capturing the CO_2 emissions we produce, we have a further opportunity to convert this carbon into products, industries and technologies of the future.

3. Heat and Energy

The energy we create is being actively used to decarbonise other sectors. Heat networks like at our Kemsley EfW in Kent supply heat from our process to decarbonise the neighbouring DS Smith paper mill, with two further heat networks in development at Skelton Grange and Kelvin EfWs.

Figure 5. Over the past 5 years, household recycling rates in England[15] and Wales[16] have remained static



15 GOV.UK: UK statistics on waste to 2022 (published Sept 2024) and GOV.UK: Local authority collected waste management – Provisional annual results 2023/24 (published March 27, 2025).
16 Statistics Wales. Annual reuse/recycling/composting rates by local authority for Wales and Department for Environment, Food & Rural Affairs. Annual results by local authorities for England.

Waste, Climate and Energy Policy

Our goal is to take a proactive approach to regulation, ensuring a dynamic business that helps shape net zero via decarbonisation.

There are several positive incoming regulations, which are likely to affect our waste mix over the coming years, increasing circularity and reducing our Scope 1 emissions. These include:

Waste Policy

Circular Economy Strategy

Building on the UK's Resources and Waste Strategy (RWS) of 2018, a new Circular Economy Strategy for England is being developed for publication in late 2025. The UK Government has formed a new Circular Economy Taskforce to support the Strategy, chaired by former Ellen MacArthur Foundation CEO Andrew Morlet.

Elimination of landfill

Eliminating the landfilling of biodegradable municipal waste is key to the UK meeting its net zero objectives and supporting the development of a Circular Economy. The Government published a Call for Evidence to support the development of policy options to deliver this objective and is targeting a consultation on potential implementation measures later this year.

Simpler Waste – Commercial

From 2025, all businesses will be legally required to recycle their waste.

Simpler Recycling – Residential

From 2026, household recycling schemes will be standardised throughout the UK.

Packaging reforms

In 2024, suppliers were obliged to submit data to inform the UK's Extended Producer Responsibility scheme, which adopts a 'polluter pays' principle, aiming to drastically increase circularity.

From 2027, kerbside plastic film recycling will be introduced.

In 2027, a Deposit Return Scheme for drinks packaging will be introduced to England and Scotland, with a separate Scheme planned for Wales.

Climate Policy

UK Emissions Trading Scheme (UK ETS)

The UK ETS is a cap-and-trade system designed to reduce greenhouse gas emissions in the UK. The majority of the UK's EfW facilities are due to be included in the UK ETS from 2028. This will provide a clear price signal to producers of waste to reduce or reuse their resources in the first instance. Separately, the UK ETS Authority has also committed to including greenhouse gas removals, or carbon dioxide removals, in the UK ETS in the future. Combined, these interventions will bolster the economic case for decarbonising the waste sector and adopting technologies like CCUS.

Whilst there has been hope of a combined EU/UK ETS, UK carbon pricing is especially low at present. Through governmental net zero investment and carbon credit lenses, a higher price also carries significant benefits. In the UK, the price of ETS allowances fell 22% from £46.00/tonne in January to £35.98/tonne in December 2024, whereas the average EU price was £55.73/tonne.

Energy Policy

Review of Electricity Market Arrangements (REMA)

A Review of the Electricity Market Arrangements (REMA) was announced by the UK Government in 2022 with a view to identifying any reforms needed to transition to a decarbonised, cost effective and secure electricity system. The Review remains ongoing and as per the Government's Autumn 2024 market update, no decision has yet been taken on transition to zonal pricing or reformed national pricing.

Electricity Generator Levy (EGL)

The EGL applies at a rate of 45% to exceptional receipts of companies that generate electricity in the UK from 1 January 2023 to 31 March 2028. The levy applies to exceptional receipts from generation that is subject to wholesale purchase of electricity arising during that period and includes EfW operators like enfinium. An exemption exists for projects with a government contract for difference (the primary mechanism used to incentivise investment in new low-carbon electricity), including power sold under the CfD at our Kemsley EfW.

Our decarbonisation agenda involves a partnership between the customers, governments, and communities we serve.

We remain committed to those strong daily interactions and relationships to deliver our goal of decarbonisation powered by waste. I am encouraged by the positive approval ratings achieved once again with waste customers in our annual customer survey."

Wayne Robertson
Chief Commercial & Strategy Officer

Waste, Climate and Energy Policy Timeline

2024

Waste

2024: Extended Producer Responsibility

Data required from producers

2025

Waste

2025: Circular Economy Strategy

Circular Economy Strategy to be published

2025: Simpler waste (commercial)

Ensures all businesses to be legally required to recycle their waste

Energy

2025: Review of Electricity Market Arrangements

Second consultation expected

2026

Climate Change

2026: UK Emissions Trading Scheme

Shadow two-year phasing period begins

2026: Carbon Border Adjustment Mechanism

EU CBAM becomes effective

Waste

2026: Simpler waste (residential)

Ensures all household recycling schemes are standardised throughout the UK

2027

Waste

2027: Kerbside plastic film recycling

2027: Deposit Return Scheme

for drinks packaging to be introduced to England and Scotland, with a separate scheme for Wales

2028

Climate Change

2028: UK Emissions Trading Scheme

EfW facilities enter the UK ETS

Energy

2028; Electricity Generator Levy

Levy came into effect in 2023 and will extend until 2028

Waste

Landfill Tax

Ongoing: LFT standard and lower rates set annually by the Government

Our Strategy

TRUSTED TODAY | PIONEERING TOMORROW

At enfinium, our business strategy is synonymous with our sustainability strategy, closely aligned with net zero and with the rapidly changing nature of our society.

The following pages outline our pioneering approach to tomorrow and operational excellence today, while delivering our two major construction projects at Skelton Grange and Kelvin.

Useful links

- Energy-from-Waste as a carbon dioxide removal pathway in the United Kingdom
- enfinium Net Zero Transition Plan report

Our Net Zero Transition Plan

In May 2024, we launched our Net Zero Transition Plan, setting out how we will decarbonise existing operations and evolve our business toward carbon removals via (CCUS).

We firmly believe in the economic certainty offered by the UK's Net Zero transition. As reforms are introduced and our customers seek to adapt, we will position ourselves as a transition partner of choice, working collaboratively and innovatively to couple societal and economic gain.

Increasingly, at a global and national level, carbon capture is viewed as a critical enabler to net zero, without which it is unlikely to be achieved.

Our Net Zero Transition Plan, is built around our desire to move from EfW operations today to a carbon removals business tomorrow, delivering net zero across all operations by 2033 and to deliver up to 1.2 million tonnes of net removals per year by 2039.

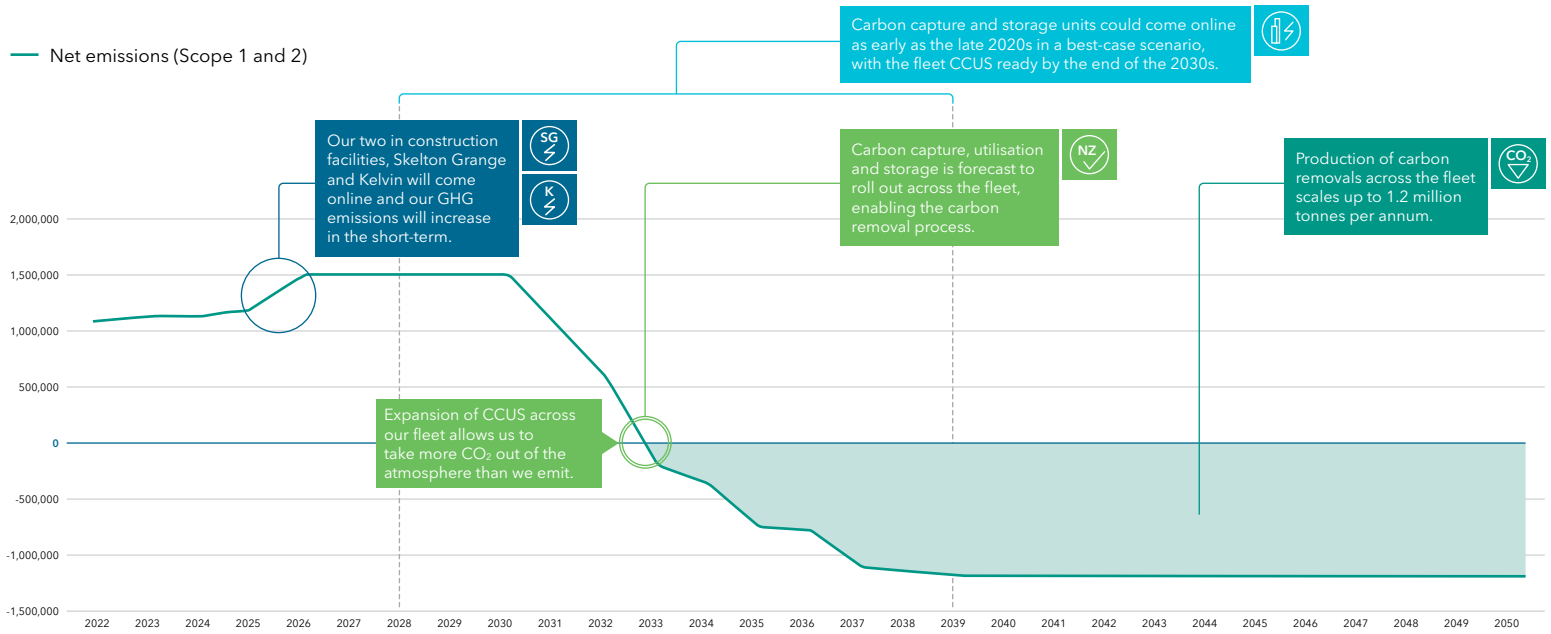
This Plan will be achieved by:

1. Advocating for and supporting measures that support recycling and a reduction of fossil waste
2. Exploring options to displace diesel use in mobile plant vehicles and reduce emissions associated with the use of auxiliary fuels
3. Influencing and aligning Scope 3 emissions among our customers and suppliers, focussing on construction, consumables and transport emissions
4. Procuring 100% renewable Scope 2 electricity and reducing consumption via efficiencies and solar adoption
5. Evolving our facilities to become decarbonisation hubs, serving the needs of our customers, suppliers and communities, including transport fuelling
6. Developing carbon capture, permanently storing fossil and biogenic carbon from our facilities, achieving net carbon removals in the process

Roadmap to Net Zero

Our roadmap to net zero remains on track and is built upon our strategies outlined below.

Figure 6. Our Net Zero Transition Plan



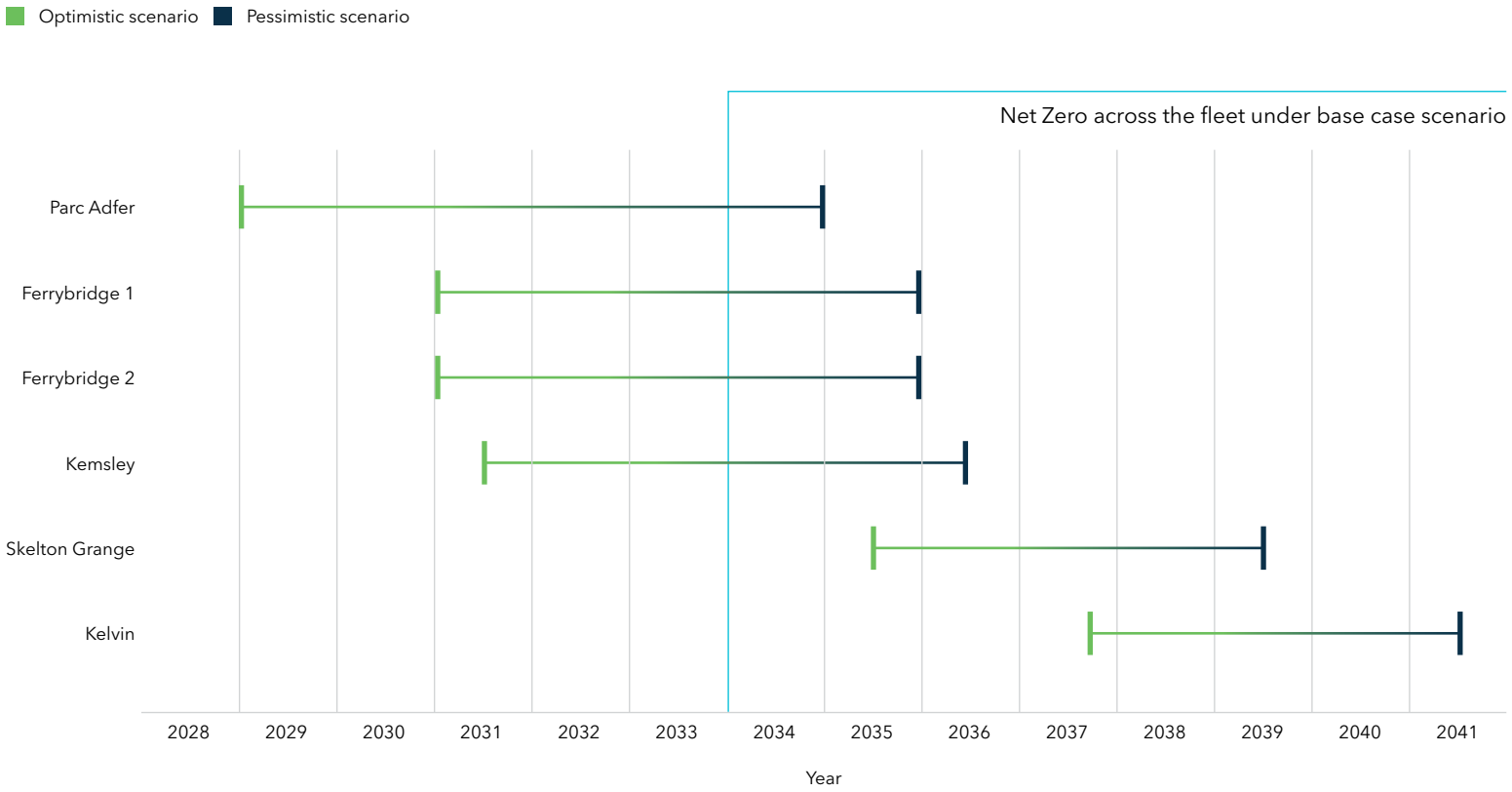
Note: line shown is net emissions, defined as net greenhouse gas emissions includes Scope 1 direct emissions (fossil only), Scope 2 emissions and carbon captured from CCUS. Scope 1 and 2 emissions in line with GHG Protocol Reporting Standards for waste.

CCUS Timeline

We remain committed to our CCUS timeline communicated in last year's Net Zero Transition Plan report. Target delivery windows included optimistic and pessimistic ends of scenarios modelled, which bookend our base case assumptions for carbon capture development and operation. Parc Adfer remains our first planned commercial-scale carbon capture plant on the basis of submitting an application for grant funding under the Government's Waste Industrial Carbon Capture (ICC) Business Model. A further decision on whether the project will progress into bilateral commercial negotiations is anticipated in 2025.

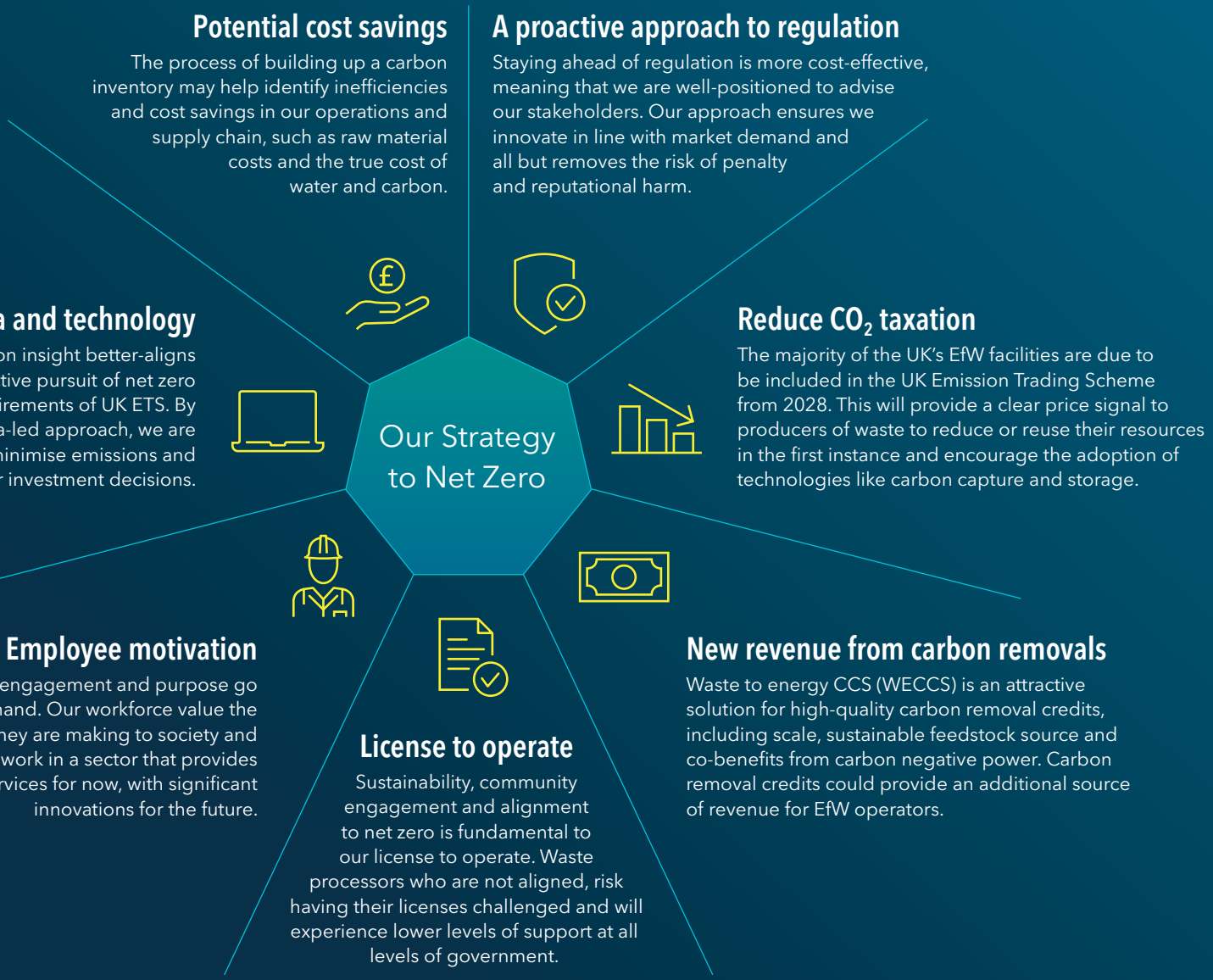
In addition to our work at Parc Adfer, we continue to progress the technical development of our Ferrybridge 1 and 2 facilities, which could leverage either pipeline or non-pipeline transport solutions once their emissions are captured. At Kemsley, we continue to work closely with local emitters in the region to identify opportunities to develop CCUS infrastructure in the Swale and Medway area.

Figure 7. CCUS timeline: target delivery windows for start of CCUS operations at each enfinium facility



Clear Benefits in Aligning our Strategy to Net Zero

By combining our approach to business and sustainability strategy, we will realise the following benefits:



Potential cost savings

The process of building up a carbon inventory may help identify inefficiencies and cost savings in our operations and supply chain, such as raw material costs and the true cost of water and carbon.

A proactive approach to regulation

Staying ahead of regulation is more cost-effective, meaning that we are well-positioned to advise our stakeholders. Our approach ensures we innovate in line with market demand and all but removes the risk of penalty and reputational harm.

Data and technology

Greater emission insight better-aligns us to our objective pursuit of net zero and the requirements of UK ETS. By taking a data-led approach, we are equipped to minimise emissions and make stronger investment decisions.

Reduce CO_2 taxation

The majority of the UK's EfW facilities are due to be included in the UK Emission Trading Scheme from 2028. This will provide a clear price signal to producers of waste to reduce or reuse their resources in the first instance and encourage the adoption of technologies like carbon capture and storage.

Employee motivation

Employee engagement and purpose go hand-in-hand. Our workforce value the contribution they are making to society and are excited to work in a sector that provides essential services for now, with significant innovations for the future.

License to operate

Sustainability, community engagement and alignment to net zero is fundamental to our license to operate. Waste processors who are not aligned, risk having their licenses challenged and will experience lower levels of support at all levels of government.

New revenue from carbon removals

Waste to energy CCS (WECCS) is an attractive solution for high-quality carbon removal credits, including scale, sustainable feedstock source and co-benefits from carbon negative power. Carbon removal credits could provide an additional source of revenue for EfW operators.

Material Topics

The ESG Working Group conducted a materiality assessment in 2024 to refresh and redetermine the material environmental and commercial factors which are most likely to affect the business over the next four-year period.

We identified eight additional factors, bringing the total to 16. Each material factor is addressed within this report – please refer to figure 8 on the right.

Figure 8. Defined materiality topics aligned to our business and our impact

Our Business

Governance

Business Ethics and Compliance
Trusted partner to customers, communities, suppliers and regulators

Corporate Governance
Ensure best practice in governance, reporting, authorities and approvals

Risk Management
Effective identification, assessment and management of risks and opportunities

NEW
Supply Chain Sustainability
Ensure Sustainability standards are upheld throughout supply chain

NEW
Data & Cybersecurity Governance
Ensure effective management, security and use of data and appropriate governance for cybersecurity risks and digital assets

People

Employee Engagement & Wellbeing
Develop engaged team, promote wellbeing, attract and retain talent

Health & Safety
We believe in zero harm to physical and mental health

Our Impact

Environmental

Climate Change / GHG Emissions
Work towards lower GHG gas and CO_2 emissions to meet net zero

Air Quality Management
Effective monitoring and remediation of air pollution (SOx, Nox)

NEW
Energy Efficiency
Implement measures to reduce energy consumption and increase efficiency

NEW
Waste Management
Minimise waste generation through reduction, reuse and recycling

NEW
Biodiversity and Land Use
Protect and restore biodiversity, manage land and impacts on natural habitats

NEW
Climate Change Adaptation
Develop strategies to adapt to climate change, extreme weather

Communities

Community
Work with communities through outreach and maintain social license to operate

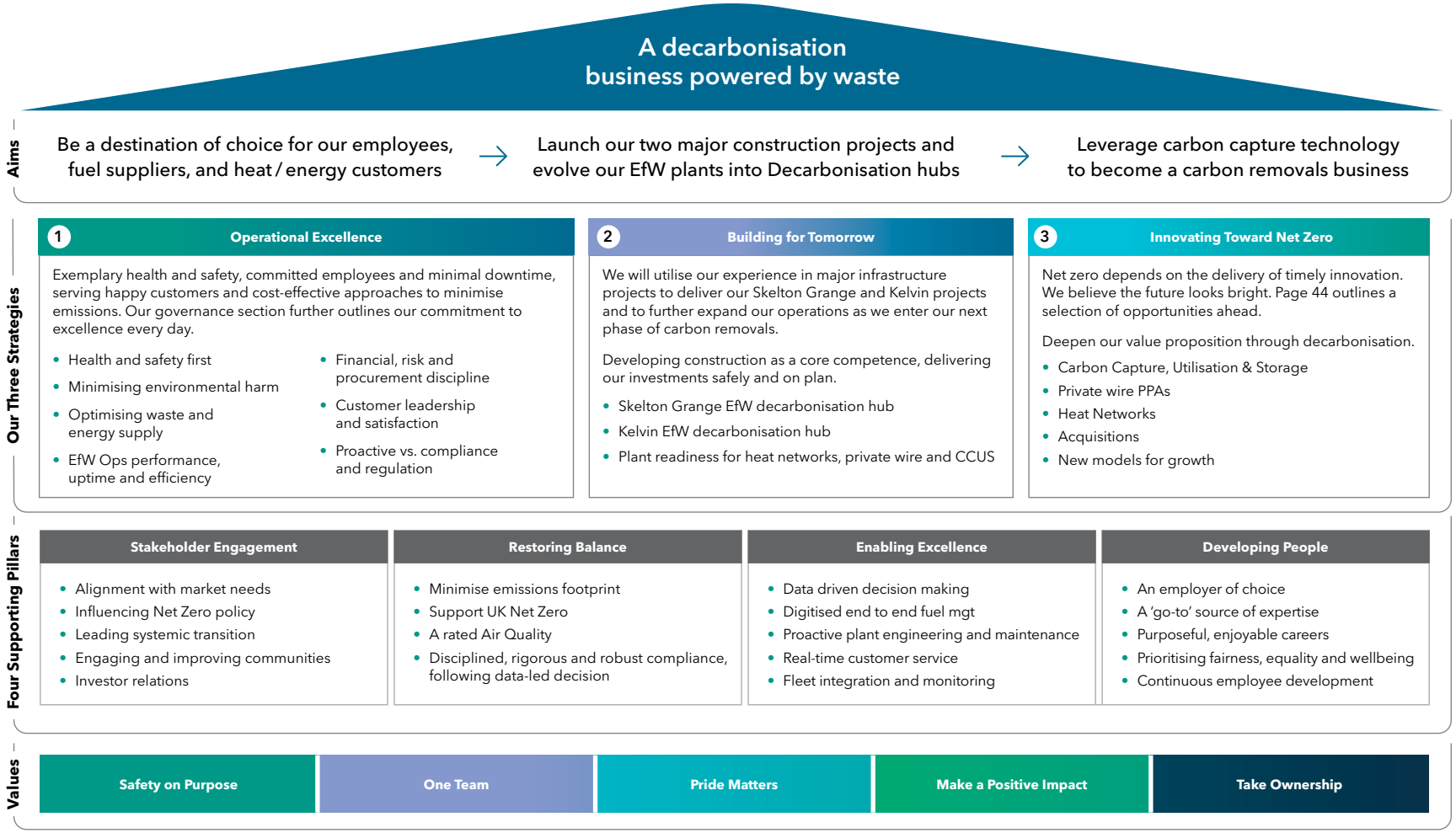
NEW
Social Impact
Assess and address social impact of operations, products or services on society

NEW
Philanthropic and Volunteering
Support charitable causes, community projects and volunteering

Strategic Framework

Our strategic framework (Figure 9) outlines three key priorities for the business, which form the structure of our reporting.

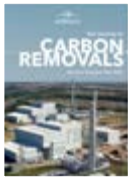
Figure 9. Our strategic framework has 3 core components; operational excellence; building for tomorrow, and investing toward net zero



Our Strategic Timeline

Next Steps

In the short-term, we have outlined three principal targets to help us deliver on our net-zero promise, achievable by 2025. This table summarises these goals, together with our progress to date:



Net Zero Transition Plan Report

TARGET

SHORT TERM (to 2025)

Target 1	Target 2	Target 3
GOAL Continue investment in feasibility and design development for CCUS projects at all operational EfW facilities.	**GOAL** Mobilise an operational CCUS pilot plant at our facilities.	**GOAL** Engage with 50% of suppliers by spend to lower emissions by 2025.
PROGRESS Investment ongoing on feasibility and design development for our initial CCUS project focus at Parc Adfer and Ferrybridge. See Parc Adfer ICC bid on page 80.	**PROGRESS** We operationalised the UK's first EfW CCUS pilot plant at Ferrybridge in September. See Ferrybridge CCUS pilot plant on page 81.	**PROGRESS** We have integrated Sustainability requirements into our Supplier Code of Conduct as well as ongoing procurement activities. See IBA and APCR commitments on page 76.
STATUS: ON TRACK	STATUS: COMPLETE	STATUS: ON TRACK

2025

MEDIUM TERM (2025-2035)

Carbon capture projects delivered at all current operational facilities from 2029 - 2033

Net zero for enfinium's Scope 1 and 2 emissions by 2033

Heat offtake and private wire advanced at all six plants by 2035

Electrolytic hydrogen production by 2035

2035

LONG TERM (2035-2050)

Carbon capture fully operational at current construction projects by 2039

Strategy 1

Operational Excellence

Strategy: Circular Economy

Our Circular Economy strategy forms three component parts:

1. Waste content
2. Recovered waste output, in the form of IBA, APCr and metals
3. Generated heat and energy (see page 43)

Waste Content

We seek wherever possible to screen waste when it arrives at our facilities. This is done to ensure compliance with unrecyclable waste contracts, heavy goods vehicle (HGV) delivery time slots are adhered to, and over-sized materials are excluded from the bunker. Any HGVs found to contain visibly recyclable waste are rejected at the gate and appropriate penalties paid. We undertake waste inspections to ensure no BEAR[17] materials outside of scope of the permit are being processed and our fuel team contact any supplier where this material is found.

Once waste is onsite, our operatives screen unacceptable waste where possible. Until now, this has been a manual process. However, 2024 has seen the introduction of our Wasteer AI platform, a trial at Ferrybridge 2 which will offer advancement through automation, as featured on page 37 of this report.

Recovered Waste Output

Our EfW process leads to three notable by-products: incinerator bottom ash (IBA), air pollution control residue (APCr) and metals.

In 2024, enfinium initiated a comprehensive IBA and APCr tender process to recontract across its fleet of EfW plants including at our two construction projects, Skelton Grange and Kelvin, embedding sustainability within contracts.

Air Pollution Control Residues (APCr)

To keep emissions as low as they can feasibly be, enfinium adds consumables, such as lime, ammonia (or urea) and powered activated carbon, during the combustion process. These consumables control our emissions and keep them within strict limits imposed by our permits.

APCr is a by-product of this treatment, accounting for 2-3% of mass waste processed. While the material is classified as a hazardous waste, there are a variety of by-product use cases, such as in the production of low carbon cement. Such applications are well-aligned to a Circular Economy (see page 23).

In 2024, sustainability was placed at the heart of our APCr contract negotiations.

The process provided the opportunity to integrate sustainability into the contracts, with clear targets for R5[18] recovery and regular recovery rate data sharing to drive change.

enfinium's ambitious though achievable target is to achieve 100% recycling of APCr into new products with no residues going to landfill across our EfW fleet. We define this as working with suppliers that have an R5 waste recovery code, with material sent to a D9[19] facility as back up.

The sustainability target compares with an existing 76% recovery rate for our 71,703 tonnes produced today. According to Tolvik, an industry consultant, the EfW industry average recovery rate for APCr is circa 40% across the 485,000 tonnes produced today in the UK[20].

Incinerator Bottom Ash (IBA)

IBA is a remarkably useful by-product accounting for 15-25% of the total waste received at each of our EfW facilities.

Subject to local permit requirements, our IBA is cooled and stored for a period of six to eight weeks, before being processed and graded.

IBA comprises two product journeys. Firstly, for sale as an aggregate. This aggregate can be found in pipe bedding, drainage material, masonry and capping for housing development projects and a variety of other use cases.

Secondly, IBA is screened and ferrous metals are recovered at Ferrybridge 1 and 2 and sold separately.

According to Tolvik, an industry consultant, 4,380,000 tonnes of IBA is produced per annum across the EfW fleet in the UK. Of this, we produced 418,939 tonnes in 2024 (9% of UK IBA production).

17 No BEARS is a campaign run by enfinium to prevent unacceptable waste items; Bulky items are things that cause blockages like tree trunks, Explosives are items that can cause explosions like gas cylinders, Anything baled are items that are too big and too dense to process, and Reels are items whether paper, plastic or compressed materials.

18 R5 waste recovery code:The Environment Agency (EA) and Natural Resource Wales (NRW) designate an R5 recovery code for "recycling/reclamation of other inorganic materials" as set out within the EU Waste Framework Directive 2008/98 and is used for consignment notes. Select a waste recovery or disposal method for your environmental permit - GOV.UK.

19 D9 waste recovery code: The EA and NRW designates a D9 disposal code as "physico-chemical treatment of final compounds or mixtures". All APCr suppliers also operate D9 disposal facilities for out-of-spec material to ensure materials are safely disposed should R5 facilities be in scheduled or unscheduled outage.

20 Tolvik, APCr industry to recovery rates 2023.

1 – Operational Excellence

Transport

Strategy: Transport & Storage

Every day, UK households and businesses dispose of c.276,000 tonnes of waste, roughly 1.8 million cubic metres, or almost half the volume of Wembley Stadium. Whether this waste is destined for landfill, recycling, or EfW, its transportation carries a significant carbon footprint and can harm local air quality. Our transport emissions are addressed via Scope 3, as per GHG Protocol standards.

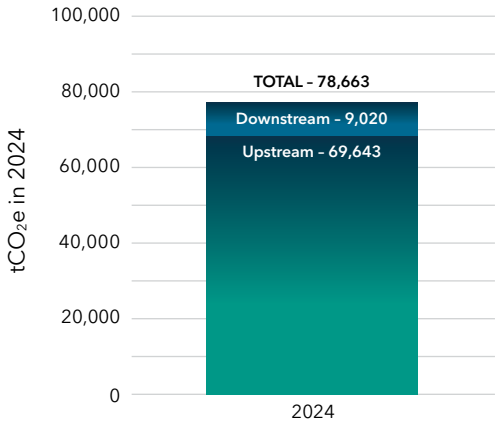
Whereas our direct (Scope 1) emissions are under our own control, our Scope 3 (indirect) transportation emissions will always be far greater, as our customers and suppliers are responsible for waste delivery and collection. A proportion of the scope 1 emissions are derived from site-based transport such as the movement of IBA. This is approximately 7% of fossil fuel combustion on site.

Scope 3 Transport Emissions (Upstream and Downstream)

At enfinium, we minimise the process impacts through the use of abatement technologies and optimise the reuse of waste products. All haulage other than our own onsite plant vehicles is classed as Scope 3. We are committed to encouraging our suppliers and customers to switch to renewable technologies wherever possible.

We are exploring the use of hydrotreated vegetable oil (HVO), Enviroflame R45 (a blend of IHO and HVO), electric and/or hydrogen to lower fossil fuel emissions across the fleet.

Figure 10. Scope 3 emissions, up and downstream



In 2024, we have sought novel methods to reduce our transport footprint. For example, we have worked with our suppliers to optimise back haulage and route optimisation to reduce emissions from consumables. Lime is one such material, sourced from Derbyshire and transported to each of our four operational plants. In analysing our deliveries out and shipments in, we have been able to combine journeys ensuring utilisation on both outbound and return legs, significantly reducing total miles travelled.

Scope 1 Transport (Direct Emissions)

In the future, as part of our NZTP, we are exploring the opportunity for hydrogen production and refuelling stations, potentially enabling our customers to switch to hydrogen trucks. Transport also plays an important role in our own plant machinery. Our strategy is to decarbonise wherever possible, including greater use of electric vehicles. The significant progress made in 2024 is outlined on page 72 of this report.

Image: Skelton Grange EfW

1 – Operational Excellence

Pioneering Technology

As we enter an exciting new world of Artificial Intelligence (AI), enfinium is developing and implementing pioneering new technologies, enabling accelerated development toward net zero.

A fundamental aim of our net-zero strategy is to accurately record and address the composition of our waste material, a goal that is well-aligned to incoming Emission Trading Scheme (UK ETS) legislation.

The most important component of this measurement is the proportion of our waste that is made up of biogenic content: rated by the IPCC as having zero emissions; for example, food waste.

ETS mandates a two-year phasing period between 2026 and 2028, during which we are required to Measure, Report and Verify the composition of our waste material.

We are actively utilising all three MRV pathways:

1. Waste sampling

Waste sampling relies on physical extraction of a sample of incoming waste prior to combustion, which is done onsite whereby operators follow a specific standard.

While biogenic content analysis is highly accurate, periodical waste samples are relatively very small in size relative to the volume that is processed through an EfW facility. Multiple samples need to be undertaken to obtain a representative view of waste composition (which can vary significantly across individual suppliers, loads and subject to seasonality).

2. Balance method

Emissions monitoring equipment post-combustion can provide real-time analysis, using a theoretical balance method, by which outputs are derived from measured parameters and input assumptions.

The software is accepted for use by the Office of Gas and Electricity Markets (Ofgem) and is used at several EfW plants to determine Renewable Obligation Certificate (ROC) eligibility. The method complies with ISO 18466.

3. Carbon-14 in the flue gas

A processing monitoring system that utilises a sorbent (sodium hydroxide or soda lime) to extract a CO_2 sample from the combustion flue gas post combustion.

The sample is sent for laboratory testing to determine the ratio of carbon isotopes present (i.e. Carbon-14 dating), from which the proportion of biogenic to fossil carbon can be determined with high accuracy.

Sampling periods are carried out every month which avoids short-term sampling volatility. The method compiles with ISO 13833.

Our strategy has been to install Carbon-14 analysers across all our four operational facilities, ensuring best-in-class insight and optimisation toward our net-zero ambitions. The benefits of doing so are as systemic as they are operational, enabling a new level of insight throughout the waste supply chain, expected to unlock further efficiencies over time.

Image: Continuous emissions monitoring system (CEMS) at Kemsley EfW

Strategy: Information Technology

Operational Insight

Our shift toward a comprehensive real-time data-led view of our business applies throughout our operations. In doing so, we will reduce risk, empower our employees and align ourselves with the dynamic decision making required to achieve our net-zero goals.

In 2024, we installed a series of operational dashboards across our EfW fleet, providing real-time data from across each individual plant. The dashboards are positioned within the plant admin buildings to ensure management, operations and maintenance teams have ready access to plant performance.

The dashboards help us to monitor the following data points:

- Boiler availability
- Load factor by boiler
- Waste processing by boiler
- Parasitic load and net generation
- Waste processing efficiency by boiler
- Lime consumption ratio by boiler
- Carbon consumption ratio by boiler
- Ammonia consumption ratio by boiler.

1 – Operational Excellence

Pioneering Technology

Cyber Security

Keeping the organisation secure and our customers and reputation safe from cyberattacks is mission-critical, especially considering the current geopolitical environment.

To ensure an agile and proactive approach to cybersecurity, balancing risk, security and user convenience, we have introduced a Cyber Security & Data Governance Steering Committee (CSDGSC) chaired by our Chief Financial Officer. Here, we define and monitor the implementation of our IT security and cybersecurity governance framework, including strategy, policies, controls, capabilities, budget, skills, roles and responsibilities across the organisation.

In 2024, enfinium's Chief Information Security Officer (CISO) held a series of crisis management cyber workshops across the fleet, ensuring all senior leaders understand our policies and procedures, in response to a major cyber incident.

The workshops identified a clear containment, recovery, emergency response and escalation roadmap for all facilities. In response, our IT procurement policies have been updated, with best practice incident response metrics, roles and responsibilities, including mandatory cloud-based data backups.

Wasteer AI

In 2024, we began a trial to further enhance the efficiency of our Ferrybridge 2 facility by installing Wasteer visual-artificial intelligence technology. The new system uses advanced camera technology, powered by AI, to analyse incoming waste.

This new ability allows us to detect contaminants, such as gas bottles, before they cause operational problems. The system provides real-time alerts, records data on the incoming waste stream, and provides a new layer of analysis.

In Germany, Wasteer technology has resulted in improved plant efficiency and reliability, as well as maximising plant uptime. As we familiarise ourselves with its potential, we remain hopeful of future applications, such as identifying and diverting waste, maximising recycling and minimising emissions.

Our commitment to operational excellence is further addressed in the sections below:

Enabling excellence, Realising potential

Restoring balance, Reducing harm

Developing people, Nurturing talent

Engaging communities, Delivering impact

Image: Kelvin EfW under construction

Strategy 2

Building for Tomorrow

Construction is a critical component of our growth strategy, exemplified by our two new build EfW facilities at Skelton Grange in Leeds and Kelvin in the West Midlands.

These facilities are significant infrastructure investments, providing safe sanitary disposal of residual waste, strengthening grid resilience and supporting the local circular economy.

Skelton Grange and Kelvin each represent a £500m investment in the UK and involving up to 622 (Kelvin) to 630 (Skelton Grange) construction workers at any one time. We are committed to ensuring these EfW facilities are fully integrated into their communities and contribute to the local societies they serve.

At enfinium, construction means more than our two current projects. It represents a set of core competences and a depth of experience that we can readily apply to CCUS and other innovations, whether at our existing plants, in addressing new regional opportunities, or aligned to future acquisitions.

Our Culture in Action

Simon Forshaw
VP Engineering & Construction

We have made significant construction progress on both Skelton Grange and Kelvin, with the two facilities becoming important pieces of critical UK infrastructure. Project teams have worked tirelessly to accomplish a set of major milestones, with strong health and safety statistics demonstrating a commitment to getting home safe every day. CCUS provides an exciting engineering challenge to play our role in decarbonising the UK and serving wider society."

2 – Building for Tomorrow

Skelton Grange

Our Skelton Grange EfW is located adjacent to junction 45 of the M1, southeast of Leeds city centre and 15 miles from our existing Ferrybridge 1 and 2 facilities. The facility is built on a brownfield site of a former coal-power station and forms part of a dramatic revitalisation in Southeast Leeds, including new bridges, roads, cycleways and pathways, as well as a major clean-up operation spanning land and water.

Skelton Grange is being built by leading EPC contractor Kanadevia Inova (KVI). Construction commenced in 2021 and is on track for a successful construction operational date in 2025.

During this period, more than 630 jobs were created, including over 40 full-time operational roles. The construction has also generated a significant 'halo effect', attracting further local investment and income across the region.

The facility has two waste processing lines for added capacity and is constructed using moving grate technology, which has been well-proven over a 30-year period, now considered the go-to solution for waste management globally, increasing efficiency and profitability.

Once operational, the Skelton Grange EfW will process up to 410,000 tonnes per annum of residual waste, while generating up to 49 MW of gross installed electrical capacity. As a combined heat and power (CHP) enabled facility, with a maximum heat export capacity of 20MW thermal, Skelton Grange qualifies for waste recovery (R1) status.

This heat will be used to supply SSE Energy Solutions' Aire Valley Heat and Power Network, providing a reliable source of heat for local industry and communities (see page 77).

During the early phases of the project, the blueprints of the old coal plant were incomplete, meaning the ground concealed a few surprises. However, through adversity came many of our greatest successes. For example, we recovered 200,000 tonnes of concrete for re-use; improved access to the Pennine Way; and de-silted a section of neighbouring River Aire.

Key Development and Construction Metrics for the year 2024:

1.2m
Total hours worked

630
Peak number of workers on site

Major Developments in 2024

Q1 2024
Stack erection

Q3 2024
Turbine installation

Q3 2024
Commissioning begins

Q4 2024
Skelton Grange bridge opening

2 – Building for Tomorrow

Kelvin

Our Kelvin EfW is located adjacent to junction 1 of the M5, west of Birmingham city centre and is being built by EPC contractor ACCIONA.

Construction commenced in 2021, and the facility is scheduled to reach commercial operation in 2026.

With up to 622 construction workers active at any one time, including more than 40 full-time operational roles, the project has already generated significant local investment across the region, both directly and indirectly.

The Kelvin EfW will process up to 395,000 tonnes per annum of residual waste and generate up to 47 MW of gross installed electrical capacity.

The single-line facility is based on the moving grate technology and is combined heat and power (CHP) enabled, with a maximum heat export capacity of 20MW thermal.

Kelvin is the anchor to the Sandwell Council developed West Bromwich Heat Network, which will provide a reliable long-term source of heat for local industry and communities as a lower carbon alternative to gas boilers (see page 77).

Introducing Mark Walsh

Construction Manager at Skelton Grange and Kelvin

I joined as Wheelabrator employee number 15, back in 2011. The company's transition to enfinium and toward net zero has been an incredible journey to be a part of.

We are immensely proud of our achievements at Skelton Grange and Kelvin. During the four-year build, we have faced many hurdles. Though, we've overcome each challenge with strong teamwork, determination and creativity, benefitting the local community, the environment and enfinium.

Major Developments in 2024

Q1 2024
Stack erection

Q2 2024
Turbine installation

Key Development and Construction Metrics for the year 2024:

1.2m
Total hours worked

622
Peak number of workers on site

Q3 2024
Start cold commissioning

Q4 2024
Boiler pressure test certification

Strategy 3 – Investing Toward Net Zero

CCUS

A Government-backed Pathway Toward CCUS

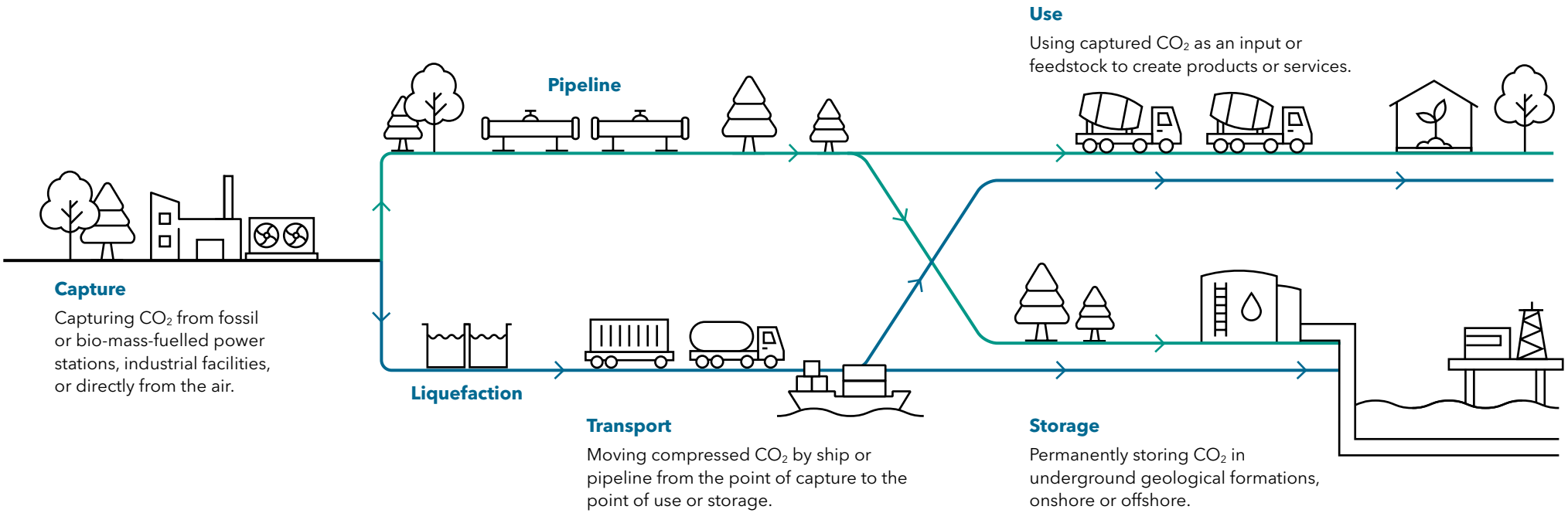
CCUS refers to a collection of technologies, capturing, compressing and transporting CO_2 – by pipeline, rail, road, ship, or barge – for re-use or permanent storage (see figure 11). Novel uses might include low-carbon cement, aggregates, or as a fertiliser for vertical farming.

In 2023, the UK Government launched its CCUS strategy, acknowledging its essential in delivering net zero, something that has been further acknowledged by the Climate Change Committee (CCC) and the Intergovernmental Panel on Climate Change (IPCC).

In October 2024, the Government committed a £21.7bn investment to kickstart CCUS in two industrial clusters. The first such cluster is North West, where our Parc Adfer EfW plant is situated. The project offers significant potential for enfinium, including access to the new HyNet pipeline, just 7km from our facility.

Such is the UK Government's commitment to CCUS, all new EfW facilities will soon be required to be CCUS-ready, a change enfinium fully support. Here, cost is perhaps the most critical challenge under a backdrop of unstable carbon pricing, meaning near-term subsidy support is required. However, this appears to be a temporary hurdle, overshadowed by global and UK Government desire and further scope for potentially lucrative innovations.

Figure 11. CCUS process diagram.



3 – Investing Toward Net Zero

Strategy: CCUS

Our ambitions as a carbon removals business can only be achieved by developing carbon capture and by permanently storing and / or processing fossil and biogenic carbon for re-use. We have made bold steps in 2024, with two R&D projects (page 81), alongside our Waste ICC bid at Parc Adfer (page 80). This pace is set to continue over the coming months and years. And whilst our strategy is not entirely dependent on the ICC bid, it would be a huge boost to our business, to North Wales and net zero.

Our R&D efforts seek to prove both the technical suitability and commercial viability of CCUS projects. However, absorbing CO_2 is only part of the challenge. We must also evaluate options for transportation, utilisation and storage. When transporting the CO_2 we absorb, pipeline access is preferable, however, demands the largest up-front investment. Other options remain available, for example via liquefaction, or localised utilisation – though, all will require economic stimulus.

One particularly energising component of our CCUS strategy is our collaborative approach and the re-appropriation of technologies across industries. As carbon capture must develop at such great scale and pace, we are able to take an industry-wide approach to developing the technology without risk to our core business. Our alliances enable CCUS to be deployed more rapidly and cost-effectively, which will grow and revitalise the EfW sector, securing its future and resolving many of its environmental challenges.

Image: Ferrybridge 1
CCS pilot plant investor tour

Our Culture in Action

Darrell Pariag
Technical Manager for Ferrybridge
KVI CCUS Pilot Plant

I joined enfinium in March 2023 at an especially exciting time for the company. Our CEO has a clear and strong vision for decarbonisation, enabled by a dynamic 'can do' culture, moving toward carbon removals at pace.

By September 2024, we had worked with our partner KVI to develop the UK's first EfW trial of CCUS, located here at Ferrybridge. At the same time, we have laid the groundwork for a significant ICC CCUS investment at our Parc Adfer plant.

Initial results have been promising as we seek to refine the technology and evaluate alternatives, in tandem with commercial modelling. As an early mover, we have acted as a catalyst to UK R&D, partnering across the industry to accelerate net zero."

3 – Investing Toward Net Zero

Generated Heat and Energy

In contrast to waste incinerators without energy recovery, each of enfinium's EfWs are designed to be Combined Heat and Power (CHP) enabled. This ability, combined with efficient and modern plant design, means all six enfinium plants are classified as having 'R1' waste recovery status: higher up the waste hierarchy, in preference to landfill.

When assessing carbon impact per tonne of waste processed, it is clear, facilities with direct heat transfer are more efficient, as energy is otherwise vented and lost unnecessarily. This heat and steam, which would otherwise be wasted, acts as a local, low-cost, and reliable source of energy for neighbouring industry and district heating networks.

CHP-enabled facilities are, therefore, a win for the environment, society and our business, through the reuse of affordable low-cost heat, generated as a by-product of our core activities.

Heat Networks

The provision of energy to heat networks does not reduce our own CO_2 emissions; however, does avoid emissions elsewhere in the economy, further increasing the carbon benefit we provide to our local community and the UK more widely.

Such networks play an important role in the UK Government's net-zero strategy and are already providing c.2% of the UK's heat, increasing to 20% by 2050 if the UK is to meet its carbon targets cost effectively. Significant funding has been allocated to support heat network development, including the Heat Networks Investment Project (HNIP) and the Green Heat Network Fund (GHNF).

EfW heat export technology is mature and has high potential for further deployment across the UK. Several UK projects are already in operation, with further expansion well-aligned to the UK Government's intended house building plans. These networks represent a core thread of enfinium's strategy, evolving from waste processing to decarbonisation hubs, transforming waste into value, a central premise of the circular economy.

Two such heat networks, Aire Valley (Leeds) and West Bromwich are especially well-placed to receive supply from our Skelton Grange and Kelvin EfWs. Significant investment has been received for both projects and, with planning phases complete, it is hoped that construction will soon be underway. See pages 78 and 79 for details.

Heat export pre-feasibility work has also been conducted at each of our four operational EfW facilities. We remain engaged with third parties near our sites, including local authorities, network operators, and industry to understand heat requirements and explore opportunities.

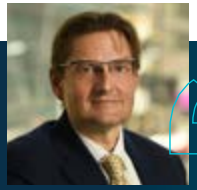
Our CHP-ready EfW facilities comply with the following characteristics:

- Adequate space for the routing of pipework and heat exchanger(s), circulating pump(s), water treatment and thermal storage infrastructure
- Blank connection flange(s) on the turbine or medium/low pressure steam headers allowing for new pipework to be connected for the export of heat
- Consideration of how supply and return pipework will navigate site traffic routes, including the option of pipe bridges
- Appropriate sizing of onsite water treatment plant and low/medium electrical consumer boards to allow additional consumers to be retrospectively installed.

Steam Generation

At our Kemsley EfW facility in Kent, steam offtake is directly transferred to a neighbouring DS Smith paper mill, a leading global provider of sustainable packaging solutions, paper products and recycling services. Since July 2020, the mill has received up to 50 MW thermal or 70 tonnes per hour of steam, reducing reliance on its existing gas-powered CHP plant, offering greater resilience and lower emissions. DS Smith accepted an offer to be acquired by International Paper in 2024.

Kemsley is the only EfW CHP facility in the UK to achieve its operational conditions precedent (OCP), meaning that the facility has satisfied the eligibility criteria required to generate electricity and receive support under a Contracts for Difference (CfD) with the UK government owned Low Carbon Contracts Company (LCCC), demonstrating Kemsley's strategic importance to the UK economy.



"We are excited about the partnership opportunities available to connect both our Skelton Grange and Kelvin facilities to local heat networks, that ensure the heat from our processes are put to work within our local communities being used to heat homes and businesses."

Paul Green,
VP Business Development

3 – Investing Toward Net Zero

Further Avenues for Growth

While our core waste management business is stable and secure over the coming years, we must evolve rapidly toward a net-zero future, guaranteeing our business remains relevant and profitable, whilst being a decarbonisation partner of choice to our stakeholders.

We are excited about the potential of our sites beyond CCUS, from innovative uses for our process materials, through to novel ways of accessing new markets, for example, by transporting waste by rail. We have included just a few of our current business development pathways.

Private Wire

As our economy digitises, demand for data and artificial intelligence is experiencing a critical moment of growth. For example, Microsoft is buidling an AI datacentre next door to our facility at Skelton Grange.

In determining the ideal location, datacentre owners seek:

1. Reliable power sources
2. Access to high-speed low latency fibre networks
3. Access to cooling water
4. Proximity to end-users and / or urban areas

Datacentres have especially high demand for power. This could be a win-win for enfinium, as we are able to supply reliable baseload energy via direct connection on a long-term contractual basis, potentially avoiding the need for a costly National Grid connection, whilst facilitating the transition to higher electricity demand.

Image: National Grid pylons at Ferrybridge

Image: Ferrybridge 1 CCS pilot plant

3 – Investing Toward Net Zero

Creating Credits for Carbon Removals

Strategy: Utilise the Voluntary Markets to Create and Sell Carbon Removal Credits

Boston Consulting Group estimates that the market opportunity for carbon dioxide removal (CDR) could range between $10 billion to $40 billion in 2030 and $20 billion to $135 billion in 2040[21]. This reflects the scientific reality that to mitigate the worst impacts of climate change, hard to abate sectors will need to increasingly turn to high integrity carbon removal credits to neutralise their own emissions.

In 2024, enfinium partnered with Isometric, a carbon registry, the Coalition of Negative Emissions (CNE) and an expert group to develop a whitepaper on how EfW with CCUS could generate high-quality, highly durable removal credits in the UK[21]. The CNE expert group included enfinium representatives, EfW peers, Cory Group, Encyclis, Veolia and Viridor; and with the Department for Energy, Security and Net Zero as observers to develop the paper.

The paper outlined the challenges and requirements for generating high quality removal credits for EfW projects with CCUS. A rigorous, reporting and verification (MRV) is critical to crediting such projects and should account for:

- Quantification of carbon dioxide storage
- Determination of counterfactual carbon dioxide storage
- Allocation of project greenhouse gas emissions
- Minimising and appropriately accounting for potential leakage
- Applying sustainable feedstock sourcing principles
- Satisfying financial additionality requirements

We have signed a supplier agreement with Isometric and are developing a project design document to generate durable high quality carbon removal credits. Isometric acknowledge "there is a path to conducting rigorous MRV for EfW facilities with CCUS, that would allow the issuance of high-quality credits from their operations"[22].

21 Source: https://www.bcg.com/publications/2023/the-need-and-market-demand-for-carbon-dioxide-removal.
22 Isometric publishes paper on the potential for Energy from Waste as a carbon removal pathway.

Image: Ferrybridge waste delivery by rail

3 – Investing Toward Net Zero

Waste by Rail

Our Ferrybridge 1 and 2 EfW facilities are built on an old coal power station in West Yorkshire, which had an existing spur line to bring coal to the site.

When the facilities were built we installed a railhead, providing the capability to import and export waste to and from the site in the future.

Rail enables the Ferrybridge facilities to accept waste from across the North of England, or further afield, reducing road traffic, at a lower cost per tonne of waste, opening new markets. On average, 76% lower emissions are generated per freight tonne-kilometre, compared to road freight.

An active rail infrastructure at Ferrybridge also opens up the potential for CO_2 to be captured at our Ferrybridge facilities, liquefied and compressed before being transported by rail for export offshore.

See page 81 for our 2024 pilot study.

Governance

4 ENABLING EXCELLENCE | REALISING POTENTIAL

Our Governance policies, procedures and ethos underpin our strategy. A robust operating platform; a measured approach to risk; and a dynamic culture, binding courage with pragmatism.

By focusing on materiality and placing stakeholder needs at the heart of our actions, we continue to evolve the needs of today toward the necessities of tomorrow.

Meet the enfinium Board

Our board of directors is led by Sir Peter Gershon CBE and includes diverse experience from Europe's leading Energy, Waste, Infrastructure and Consulting companies. In 2025, Hamish Lea-Wilson completed his four-year term as Non-Executive Director. We thank him for his extensive and valued contributions during this period.

Sir Peter Gershon CBE
Chair

Sir Peter Gershon has been our Chair since July 2021. Previously, he was the Chair of National Grid PLC, Tate & Lyle PLC, the Dreadnought Alliance and the Office of Government Commerce. Sir Peter was appointed a CBE for his services to industry in 2000 and knighted for his work on public procurement in 2004.

Lynn Fordham
Non-Executive Director

Lynn Fordham has been a Non-Executive Director since March 2022. She is Chair of the Finance, Risk Management and Audit Committee at enfinium. Previously, Lynn was the CEO of SVG Capital and has also held senior roles at Mobil, BAA PLC, Boots and Barratt Homes. Lynn is a qualified Chartered Accountant.

Philip Piddington
Non-Executive Director

Philip Piddington has been a Non-Executive Director since January 2022. He chairs the Health, Safety, Environment and Development Committees at enfinium. Previously, he was the CEO of Viridor and Chair of the Environmental Services Association. Philip has held senior management positions within the RWE Group and BP PLC.

Peter Emery
Non-Executive Director

Peter Emery has been a Non-Executive Director since June 2023. Previously, he has held Board positions at Drax Group PLC, Electricity North West Limited and Capture Power. Peter is the Chair of Greater Manchester Energy Innovation Agency and Deputy Chair of the York and North Yorkshire Local Enterprise Partnership.

Emmanuel Vivant
Non-Executive Director

Emmanuel Vivant has been an Igneo Non-Executive Director since October 2022. Previously, he was CEO of SAUR International as well as senior roles at RATP Dev Transdev Asia, Hong Kong Tramways and Veolia Transport. Emmanuel is also a member of the Board of Directors of Evos.

Mike Maudsley
Chief Executive Officer

Mike Maudsley has been Chief Executive Officer since January 2022. Previously, Mike was Chief Operations Executive Director responsible for leading all operating assets at Drax PLC. Prior to Drax, he spent six years in the Middle East with Engie.

Jenny Harrison
Chief Financial Officer

Jenny Harrison has been Chief Financial Officer since March 2023. A Chartered Accountant, she was Finance Director at UK Power Networks and has held senior roles at BT Group, EY, Andersen and Deloitte. Jenny is a Trustee of a Leeds University-based sustainability charity, United Bank of Carbon.

Kristen Sholto-Douglas
Head of Legal and Company Secretary

Kristen Sholto-Douglas has been Head of Legal and Company Secretary since December 2024. Previously, she supported the Board with governance requirements and worked on major projects including Kelvin and the Parc Adfer ICC bid.

Our Governance Structure

Our governance structure forms the backbone of our organisation, facilitating operational excellence, compliance, project delivery and dynamism toward our net zero future.

Business Development Committee

Paul Green,
VP Business Development

Reviews our latest opportunities from land to customer partnerships and market-led R&D investments.

Health, Safety & Environment Committee

Dr Jane Atkinson CBE,
Chief Operating Officer

Pursues best-in-class health and safety culture, accelerates environmental performance, reviews a rigorous programme of procedures, engagement and activity throughout the organisation.

Construction Committee

Simon Forshaw,
VP Engineering & Construction

Reviews our active projects to ensure they are run safely on time and budget, as well as nurture construction as a core competence for the future.

enfinium Board Committees			
Finance, Risk Management & Audit	Business Development	Health, Safety & Environment	Remuneration
Quarterly	Quarterly	Quarterly	Quarterly

Executive Committees				
Executive Committee & Monthly Performance Review	Approvals	Project/ Programme	Enterprise Risk Management	Construction
Monthly	Monthly	Monthly	Quarterly	Monthly

Business Level Committees and Working Groups			
Individual Projects	Sustainability Working Group	Operational Reviews	Cyber, Information & Systems
Monthly	Monthly	Monthly	Monthly

2025 ESG Working Group Objectives

In addition to delivering many of the initiatives outlined within this report, our ESG working groups have the following objectives for 2025:

ESG Working Groups

Our three working groups meet monthly as separate teams. Working groups set objectives at the beginning of the year to work through during the year. Objectives are to enhance and go beyond the business-as-usual activities wherever possible.

Each of our working groups report up to the Finance, Risk Management and Audit committee ensuring that sustainability topics are in-built into the way we operate as a business. I am proud of the working group members, who outside of their core job, contribute towards our vision of decarbonisation powered by waste."

Philip Curds
Head of ESG and Sustainability

Environmental Working Group

- Prepare water efficiency study
- Add further water meters
- Widen Scope 3 metrics through employee commuting, flight and rail journeys
- Explore changing burner and mobile plant to HVO or alternative biofuels
- Reduce burner test frequency
- Investigate rainwater harvesting potential
- Better quantify biogenic emissions
- Reduce NOx emissions
- Review benefits of wind screens for ACC/turbine efficiency
- Prepare reports from pollinator monitoring devices
- Implement findings from ecological landscape review
- Prepare biodiversity survey
- Review and update Climate Change Adaptation Plan and actions register

Social Working Group

- Prepare recycling educational and training awareness campaign
- Increase cycle to work scheme engagement
- Encourage more ride shares to lower Scope 3 transport emissions
- Further integrate sustainability into our preferred supplier programme
- Embed employee awareness days into business calendar
- Trial workplace massages
- Expand school and STEM visits to promote community engagement
- Expand Charity of the Year programme strategy
- Increase volunteering hours through digital platforms
- Raise awareness on traffic management and vehicle interfacing at facilities

Governance Working Group

- Launch Code of Ethics, alongside communications and training programme
- Prepare and expand visitor packs for each facility
- Prepare training for statutory directors and senior managers, including health and safety, environmental and companies act
- Embed processes and concepts identified within the Enterprise Risk Project
- Launched revised procurement policy and procedures
- Investigate approved supplier and due diligence databases
- Enhance operational security and control remote access technology

Awards and Accreditations

Awards and Accreditations

In 2024, enfinium proudly won an Sustainability award for our Net Zero Transition Plan and a Bionet award for biodiversity in North Wales. We were also finalists for two others.

- **IJ Global ESG Awards**
  Environmental Award **WINNER**
- **Bionet Business Award**
  Biodiversity in North Wales **WINNER**
- **Edie Net Zero Awards**
  Net Zero Strategy of the Year **FINALIST**
- **UK Green Business Awards**
  Net Zero Strategy of the Year **FINALIST**

IJ Global ESG Awards 2024 WINNER

The IJ Global ESG Awards are designed to give organisations within the international infrastructure and energy community the opportunity to demonstrate and inspire progress. The awards are open to entries from across the globe, with the IJ Global ESG Award taking place annually in London.

An international judging committee – all of them established professionals in the infrastructure and energy world – review submissions and take a view on company performance in the previous year. An award from IJ Global is a true recognition from the industry.

Companies and transactions of any size are eligible to enter and all entries have a fair and equal chance of winning. As a global competition, there are no geographical limitations.

Image: IJ Global Awards 2024

We were awarded the prestigious Environment Award by IJ Global ESG Award 2024 for our Net Zero Transition Plan. The award is presented to the company demonstrating greatest impact in the wake of rising environmental challenges.

IJGlobal ESG AWARDS 2024 — 2024 WINNER

bionet Awards 2024 — 2024 WINNER

edie NET-ZERO AWARDS — 2024 FINALIST

BusinessGreen UK Green Business Awards 2024 — 2024 FINALIST

Our Five Core Values

Culture is the essence of our company, and sits at the heart of each of our three strategic pathways: Operational Excellence, Construction and Innovation.

Over the past four years, we have evolved enfinium into an organisation described by employees as friendly, supportive, fast-paced, and purpose-driven. These key elements resonate across every site, whether operational, corporate, or construction.

As well as having a strong central culture to guide us, it is equally important that each of our operational sites have their own unique personality and character.

We have achieved this by having the right people and focusing them on our shared passion for making a difference.

Our five values are at the heart of our culture and are used to underpin our actions every day.

Safety on Purpose

We work safely on purpose to ensure we all return home safe, every shift, every day.

We are empowered to always do the right thing for the safety of our team and the communities we operate in.

One Team

We work best when we work together.

We understand that the whole is more important than the sum of its parts, and that each of our different perspectives is valued, listened to and contributes to our overall success.

Pride Matters

We have pride in ourselves, our team and the industry leading service we provide to our customers and communities.

We will leverage our experience and our integrity to continue to drive operational excellence and continuous improvement.

Make a Positive Impact

We work hard to make a positive difference every day for our environment and the world we live in.

We are responsible for delivering exceptional safety, environmental and operational performance at all times.

Take Ownership

We take ownership to solve business, customer and community problems that improve the circular economy.

We will be better than we were yesterday.

Our Culture

Encompassing our five values are three cultural pillars:

1.

Looking after each other

Our people feel empowered to address safety concerns and are confident in speaking up. They also take the time to care for each other and look out for their enfinium family.

2.

Delivering Excellence

A strong core driver in each member of the enfinium team is to uphold high standards and resolve issues. We seek these traits during recruitment and spotlight and reward performance and drive in our people.

3.

Pride

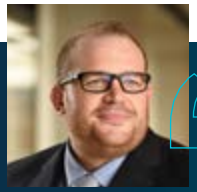
We are proud of what we do, our role in society, our role in the community, and our role as colleagues. We take pride in coming to work each day, performing excellently, and are excited about what we can achieve in the future.

Whistleblowing

We established a Whistleblowing Policy and related channels to ensure employees feel safe and supported, when reporting any wrongdoings or violations in 2022. The whistleblowing policy promotes accountability at all levels, empowering employees to speak up against misconduct and protecting the organisation from reputational and financial risks. Employees are able to report concerns anonymously, with all reports treated confidentially and investigated thoroughly.

A whistleblowing hotline, Safecall is available 24/7. All reported offences are investigated, with all information related to the investigation of any actual or suspected offences treated confidentially.

Whistleblowing hotline reports to Head of Legal and logs are reviewed at an Executive Committee level.



"We strive to be the employer of choice locally and across our industries, recognised for our focus on sustainability and contribution to decarbonisation. We aim to be an engaged, welcoming and safe place to work, where fairness, diversity, progression and success are valued by all."

Tom Darby
Chief People Officer

Our Approach to Risk

We are focused on risks to our strategic objectives. enfinium has been developing a strong risk management and compliance culture to further-strengthen its sustainable approach to growth.

In 2024, we continued our investment in risk governance, enhancing our standards, frameworks and tools, through an Enterprise Risk Management process, with three clear objectives:

1. Improve our ability to anticipate, assess and mitigate risks, before they impact business performance
2. Develop a risk culture, in which teams proactively manage risks as part of their everyday roles
3. Work with key stakeholders to monitor, maintain and improve enterprise risk process, ensuring timely communication to the Risk Committee

The Enterprise Risk Management process has now been successfully rolled out, with the first in-depth Board risk review workshop held in 2024. We strive to proactively identify, analyse, manage, mitigate, and report a wide range of existing and emerging risks, such as operational, technology/IT, legal, and reputational risk. Sustainability-related risks are becoming increasingly prominent, and as such have been integrated within the organisation's risk appetite, further reflecting the amalgamation of our commercial and sustainability strategies.

"The Enterprise Risk Management framework has been fully integrated into our business. Considering risks to our objectives is becoming a natural discussion and part of how we take decisions."

Jenny Harrison
Chief Financial Officer

Net / Residual Risk

Likelihood			Impact: Minor 1	Moderate 2	Major 3	Severe 4	Critical 5
	Rare	1					
	Unlikely	2					
	Possible	3			12 13 14 15 16 17	6 7 8 9 10 11	1 3 4
	Likely	4		18	5		
	Almost certain	5			2		

#	Ref	Risk (all risks with a residual risk rating fo 7 or more)	Net Trend	Owner
1	PR001	[illegible]	→	J. Atkinson
2	PR011	[illegible]	→	J. Harrison
3	PR013	[illegible]	→	J. Atkinson
4	PR015	[illegible]	→	P. Green
5	PR002	[illegible]	→	T. Darby
6	PR003	[illegible]	→	J. Atkinson
7	PR004	[illegible]	→	J. Atkinson
8	PR005	[illegible]	→	W. Robertson
9	PR006	[illegible]	→	W. Robertson
10	PR009	[illegible]	→	S. Forshaw
11	PR010	[illegible]	→	P. Green
12	PR007	[illegible]	→	W. Robertson
13	PR008	[illegible]	→	W. Robertson
14	PR012	[illegible]	→	J. Harrison
15	PR014	[illegible]	→	P. Green
16	PR016	[illegible]	→	P. Green
17	PR017	[illegible]	→	P. Green
18	PR018	[illegible]	→	T. Darby

Adapting to Physical Climate Risk

As part of our business continuity management, we maintain a comprehensive adaptation plan. The plan uses climate scenario analysis, to evaluate risks such as flooding and extreme weather events across our key areas of operation.

Under EA and NRW guidance, significant risks must be controlled appropriately, and a climate change adaptation plan completed for all significant risks from climate variables. We approached physical risks from a top down and bottom-up perspective.

For top down, we used the S&P Climanomics hazard modelling datasets which reflect climate-change in the level of hazard exposure of a facility over time, relative to a historical baseline. Each hazard is associated with a specific metric, which defines how the hazard is measured and expressed.

For bottom up, we conducted physical risk assessment workshops at all our four operational EfWs in August and September 2024. This involved Operations and Maintenance teams from across the facilities, alongside support from our plant and environmental managers. The outputs from these workshops have formed the basis for our risk assessment and adaptation plans in 2025 and beyond.

We modelled all our EfW facilities over three-time horizons:

1. **Short-term**
   Between now and 2030
2. **Mid-term**
   2031-2040
3. **Long-term time**
   2041-2050

Climate-related physical risks included temperature extremes, drought, water stress, wildfire, coastal flooding, fluvial flooding and tropical cyclone.

We also evaluated systemic risks, such as road closures and effects on critical third-party infrastructure, which require operational resilience in the event of shocks.

The climate adaptation measures identified are integrated into future construction projects and include protocols to monitor climate-related indicators across our operations. We completed an adaptation plan for Parc Adfer in 2024; plan to expand to all EfW facilities in 2025. Every EfW facility reviews their adaptation plan annually, with climate change risk assessments completed every 4 years.

Based on the specific locations of our facilities, we have identified no immediate risks that require urgent adaptation measures. Consequently, our approach focuses on ongoing monitoring to address any emerging vulnerabilities promptly.

Image: Kemsley EfW and Isle of Sheppey estuary

Partnering for Success

enfinium cannot act alone in striving toward net zero. Our strategy is firmly aligned with the needs and direction of our customers, suppliers and broader network of stakeholders, with whom we must closely align in pursuit of excellence today and innovation tomorrow.

Procurement

Engaging with our diverse network of suppliers, from small and medium sized businesses (SMEs) to multinational corporations, we aim to reduce Scope 3 emissions, whilst managing operational, financial, regulatory, and reputational risks, as a responsible, trusted and valued partner.

Our centralised procurement division reports directly to the Chief Operating Officer and the Operational Excellence Steering Committee, aligning our operating model with best practices in governance, supply chain efficiency and vendor engagement.

We work with a dedicated inhouse team, using bespoke technology, guided by our comprehensive policy framework and strategic approach to net zero.

Procurement is organised into four departments, each adhering to industry best practices. The team works hard to promote and embody sustainable practices in everything we do.

Supplier Code of Conduct

The process of engaging, assessing, and monitoring suppliers is a collaborative effort involving procurement, risk, and relationship owners. Our supplier code establishes clear expectations for current and prospective suppliers, emphasising our zero tolerance for unethical conduct.

When selecting and reviewing suppliers, we demand proactive compliance with all applicable laws, regulations, and policies. Our code of conduct gives structure to our due diligence process and promotes the environmental, social and governance principles, at the heart of our business and net-zero goals.

As of 2024, every enfinium supplier must commit to our code of conduct, evidencing their practices accordingly. Our minimum expectations include, but are not limited to:

- Anti-bribery and anti-corruption practices
- Conflict of interest assessments
- Money laundering and sanctions prevention
- Adherence to human rights standards, including preventing discrimination and unfair treatment
- Prohibition of child and forced labour

Image: Ferrybridge waste delivery by rail with partner Freightliner

- Ethical recruitment and freely chosen employment
- Fulfilment of labour rights and labour practices (including minimum wage, conditions of living/work, and grievance process)
- Consideration of environmental practices and impact of climate change
- Adherence to all applicable laws and regulations

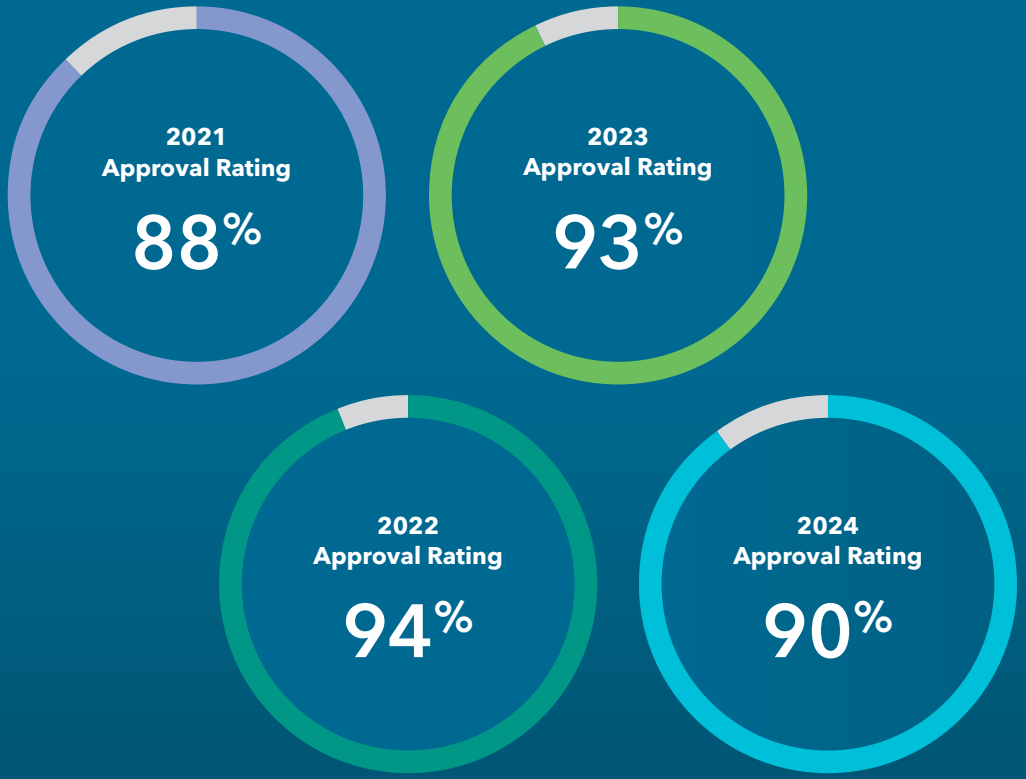


Image:
Skelton Grange EfW
weighbridge security

Contractors

With up to 696 contractors on our construction sites at peak, safety and compliance is paramount to successful project delivery. Dedicated enfinium staff at each construction site ensure our safety culture and construction specifications are met with the highest standards of care. We continually strive for excellence, and this has become a key focus of our executive committees.

Customers

Our customers have a choice of where to send their waste and they look to us for safe, reliable and well managed EfW facilities to get the job done. While our contracts tend to be long-term, our work is never done. We pursue net zero in alignment with our customer goals and regulatory obligations, which play an inherent role in future demand. The UK waste sector is a close-knit environment, offering significant scope for collective action. enfinium is well respected and positioned to take a leading role.

Each year, we monitor customer satisfaction. In 2024, this was 90%, primarily determined by customer operations, such as safety, transport access and speed of turnaround onsite. There is presently an industry-wide shift toward digital waste tracking and processing, which will further improve efficiencies. We have also launched a series of online safety and process videos as part of our commitment to operational excellence.

Proactive Relationships Toward Net Zero

We greatly value the expertise and opportunities for shared perspective and collaboration offered by our trade association partners. Our relationships include:

Environmental Services Association (ESA)

The trade body that represents the UK's resource and waste management industry.

The Association for Renewable Energy and Clean Technology (REA)

A non-profit organisation advocating for better laws and regulations to promote the growth of renewable energy.

Resource Recovery UK (RRUK)

An alliance of UK EfW operators, representing much of the sector. RRUK is an affiliate of the Environmental Services Association (ESA). enfinium CEO, Mike Maudsley is the Chair of RRUK.

UK District Energy Association

A trade association that champions the decarbonisation of heat through a variety of district heating and industrial steam offtake projects.

Carbon Capture and Storage Association (CCSA)

An association aiming to make sure carbon capture, utilisation and storage (CCUS) is recognised as a key solution to deliver net-zero emissions.

Coalition for Negative Emissions

An association of members that look to scale the challenges faced in reaching climate targets.

Image: CCSA conference 2024

Confederation of British Industry (CBI)

The organisation represents businesses across the UK through boards and committees to ensure business is heard in government and beyond.

Energy & Utility Skills

This organisation helps employers in the energy and utilities sector attract, develop and maintain a sustainable, skilled workforce through specialist services.

Our people

DEVELOPING PEOPLE

NURTURING TALENT

Our employees are the lifeblood of our business. We cannot achieve our ambitions without them. By treating people as individuals, each with unique needs, backgrounds and abilities, we strive for an inclusive and dynamic culture, placing safety, wellbeing and progression at the forefront of our business.

While we are not perfect, it is this recognition that drives us to perform better each and every day. Our changing world determines that our work is never done.

Health & Safety

At enfinium, health and safety is a core focus and a material risk that we manage with utmost diligence. Prioritising the safety and wellbeing of our employees is fundamental to our licence to operate and central to our responsibilities as an employer. We are committed to operating a safe, responsible and sustainable business and to ensuring every person returns home safely after every shift, every day.

Each of our facilities operate to ISO standards including 45001 (Health and Safety), 14001 (Environment) and 9001 (Quality). In 2024, we identified contractor management and vehicle pedestrian interface as particular safety focus areas.

ISO 45001
(Health and Safety)

ISO 14001
(Environment)

ISO 9001
(Quality)

We actively empower and encourage employees to:

- Challenge and refuse any activity that has a detrimental effect on their health, safety and / or wellbeing, of colleagues or the environment.
- Report damaged or defective machinery and unsafe practices, ensuring action is taken to protect all employees from danger.
- Report the impact of work on their mental as well as physical wellbeing.

Our whistleblowing hotline is available to all employees, who are encouraged to report concerns related to a serious concern over wrongdoing at work.

Image: Environmental Officer at Kemsley EfW

Health and Safety Performance 2024

Health and Safety Performance

Guided by our core value of Safety on Purpose, we remain strongly committed to ensuring a safe working environment for all. In 2024, total workforce hours increased substantially, driven by major project construction activity and significant outage works across our operational sites. Despite this, we achieved strong safety outcomes. There were no fatalities reported in 2024, and the lost time injury (LTI) rate for employees and contractors improved to 0.20, the lowest in the past four years.

Since the incident involving a visiting driver at our Kemsley facility in December 2023 that ultimately led to a fatality, we have continued to co-operate with the Health and Safety Executive as part of their ongoing investigation. Ensuring zero harm is our top priority and during 2024 we renewed our focus on our Safety on Purpose programme across the business to continue to reduce risks and implement best practices in safety management.

Historic safety performance data	2021	2022	2023	2024
Total number of hours worked (annual figure) (employees)	436,398	529,355	593,356	641,614
Total number of hours worked (annual figure) (contractors)	236,579	561,955	1,331,439	2,823,974
Number of fatalities (employees and contractors)	0	0	1[23]	0
Number of lost time injuries (employees)	4	0	1	0
Number of lost time injuries (contractors)	5	2	5	7[24]
Lost time injury rate (per 100,000 hours – employees and contractors)	1.3	0.4	0.31	0.2

Employee LTIs were zero, reflecting our continued focus on proactive risk management, training, and embedding a safety-first culture. While contractor LTIs rose from 5 to 7, we are working closely with our partners to reinforce our shared commitment to Safety on Purpose through improved controls and engagement.

We will continue to drive continuous improvement and ensure that every individual—employee or contractor—returns home safe, every day.

23 An incident in December 2023 resulted in a third-party fatality in 2024. HSE guidelines consider the fatality to have occurred in 2023.
24 7 RIDDOR incidents were reported in 2024.

Developing our Health and Safety Culture

It is our primary objective to ensure our workers, contractors and visitors return safe every day. In 2024, we have made significant progress in ensuring a safe workplace for all. Taking proactive measures to identify and tackle risks, empowering our people with insights, capabilities and goals to continuously improve. Our strong 2024 is evidence of the progress we are making, however, regarding health and safety, our work is never done.

Measuring health and Safety Climate

In 2024, we launched our first Group-wide health and safety climate survey. The results provided valuable insight, highlighting both positive aspects of our current safety culture and areas where we can do more. This has established a solid baseline for each site and the Group overall, enabling us to take informed, targeted action to strengthen our approach.

Setting Health and Safety Standards

We developed a set of new health and safety standards and reviewed several existing ones to ensure they remain robust and relevant. These define clear expectations for managing risk and include practical guidance to support effective implementation. The phased rollout of these standards is underway and will continue through 2025, reinforcing a consistent and proactive approach to safety across our operations.

Improving behavioural safety observations

In 2024, we launched a training and coaching programme aimed at enhancing the quality of behavioural safety observations. The programme, which will continue into 2025, is designed to strengthen supervisors' capability to engage in positive health and safety conversations that influence safe behaviours and drive long-term cultural improvement.

Machinery safety

Independent machinery safety reviews were completed at all sites in 2024, assessing plant and equipment against current regulatory and operational standards. The reviews identified opportunities to enhance safety, and each site will deliver a programme of improvements into 2025. Any issues requiring immediate action were addressed promptly.

Plant Shutdown and Employee Wellbeing

While we are proud of our strong performance in 2024, we recognise that the most meaningful improvements often arise from addressing challenges and learning from periods of intense operational activity. Feedback from our people has highlighted that plant shutdowns can be particularly demanding, requiring additional effort and resilience. We understand that just as our plants must recover quickly from these periods, so too must our people. In response, we are focused on recognising their contributions and prioritising wellbeing as an integral part of our operational planning and recovery.

Reflecting this commitment, we selected mental health charity Mind as our 2024 charity of the year, helping to raise awareness and reduce stigma around mental health.

We also introduced a series of wellness initiatives – developed with input from employees – including personalised health checks, quiet recovery spaces, and flexible support options. Wellbeing continues to be actively supported at all levels of the organisation, with line managers and site leadership playing a key role in embedding good practices and responding to workforce needs.

Image: Ferrybridge waste delivery by rail with partner Freightliner

Diversity, Equality and Inclusion (DE&I)

At enfinium, we believe a fair and equal workplace is good for our people and our business.

Employee Diversity

Our diversity and inclusion practices reflect our fundamental belief in equal rights, equal opportunity, and the value of multiple perspectives within the organisation.

For example, we have seen a steady increase in female employees, including two top leadership positions. At the end of 2024, 16% of our employees are female, with a near-term target of 20%, significantly above the benchmark for our industry at less than 10%.

We actively encourage a culture of dignity, respect, equality, and mutual trust across our business and each of our facilities. This is good for employee retention, reputation and attendance, whilst being essential for our people's wellbeing and sense of belonging, without whom our business would cease to function.

We develop and promote our people based on merit, without demographic bias, for example, race, religion, gender, sexuality, disability, pronouns, age, or neurodiversity. This aspect of our culture is well-acknowledged and well-appreciated throughout the organisation.

We also recognise the need to avoid bias in our decision-making, working to encourage diversity of experience, perspective and thought at all levels.

Equal Pay

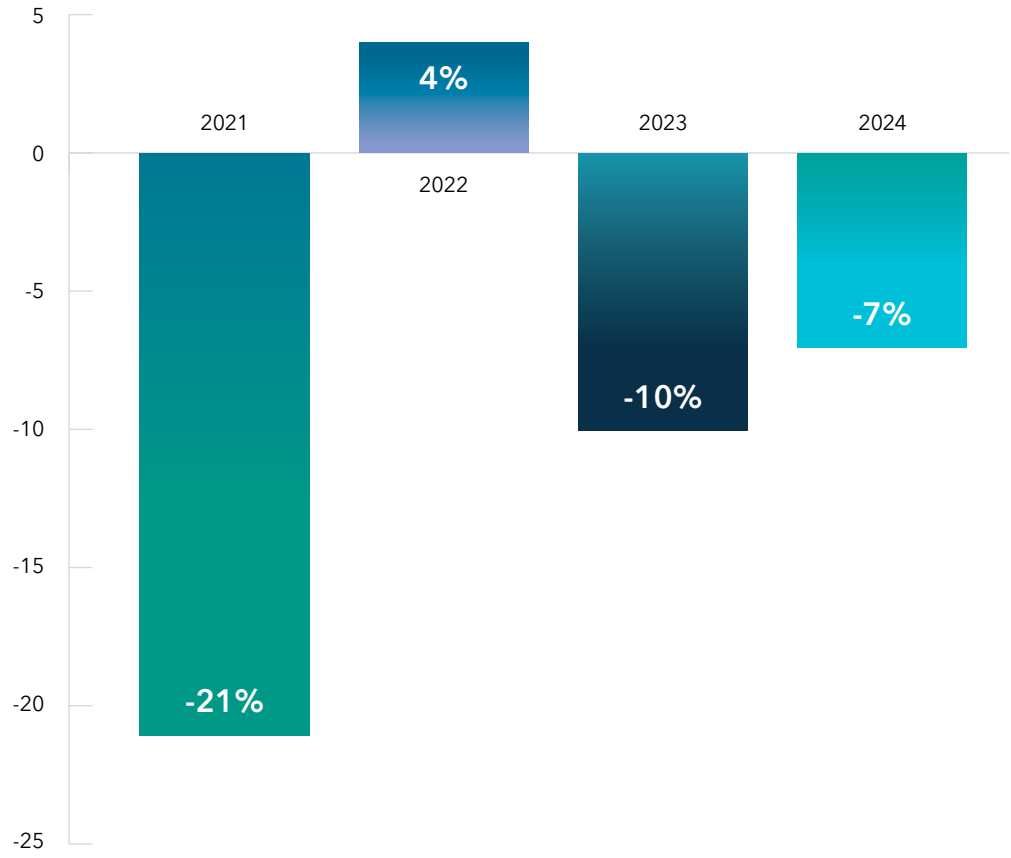
We are committed to paying colleagues equally according to the work that they do, regardless of gender, ethnicity, or disability. Our well-established processes ensure remuneration is free from bias, including our annual pay review.

Each year, we publish gender and ethnicity pay gap data to ensure transparency, demonstrating the difference in average pay between each gender and ethnicity, regardless of role or seniority. Where pay differences are identified as not related to performance, skills or experience, we take action to adjust accordingly.

Our UK gender pay gap figure is driven by several factors, including the shape of our workforce. For example, a higher ratio of females work within our corporate office and we have a relatively high number of women in the senior management – meaning women take up a large part of the highest paid roles (see figure 12).

While we are confident in our approach to pay equity, until women and ethnic minority colleagues are proportionally represented across all areas and levels of the organisation we will continue to see gaps in average pay.

Figure 12. Unadjusted Gender Pay Gap



Gender pay gap is the average gross hourly earnings of male paid employees minus average gross hourly earnings of female paid employees divided by average gross hourly earnings of male paid employees expressed as a percentage.

Purpose and Job Satisfaction

2021	2022	2023	2024
50	73	79	74
	▲ +46%	▲ +8%	▼ -6%

One of the great benefits of having a combined corporate and sustainability strategy, is the clear sense of purpose it energises among our employees. Whilst compiling this report, we conducted several employee interviews. Our interviewees consistently emphasised the value they felt in being able to contribute toward net zero each and every day.

Employee Experience Survey (EES)

We take an active approach to employee engagement, responding to individual needs and perspectives with care and purpose.

Each year, our employee experience survey assesses how our employees are feeling about their work, wellbeing and the opportunities ahead. This provides a strong understanding of the successes we can celebrate and the learnings we must build from, ultimately helping us to retain the knowledge and skills, whilst reinforcing a positive working environment.

According to best practice, our survey is conducted by a specialised third-party provider, the People Experience Hub (PX). In 2024, topics covered included management practices, learning and development, career growth, rewards and recognition, job satisfaction, wellbeing as well as managing work-related stress.

This was a pivotal year for our EES, as we re-baselined our data and further optimised our approach, in line with our commitment to operational excellence and being an employer of choice. We see attracting and developing talent as a core competence and risk to our business and so treat this with the utmost care, firmly embedded into our governance structure.

In 2024, we had a high completion rate of 88%, with 294 completed surveys out of 333 employees. Our annual employee experience survey score is 74%, significantly higher than the benchmark of 70.7%.

Whilst this score is lower than in 2023, this is largely due to survey data being 're-based' for 2024, using the PX Hub methodology: a holistic approach toward a thriving workplace, leveraging data and feedback. The method enables improved employer-employee understanding, seeks to identify areas for improvement, and cultivate a positive and high-performing culture.

THE PEOPLE EXPERIENCE HUB

Our 2024 survey identified the following strengths and areas for improvement:

Strengths

- **Safety** – high scores in empowerment to speak up and act on safety concerns
- **Purpose** – clarity on values, mission, and positive contribution to the community
- **Management** – managers are respectful, approachable and supportive
- **Pride matters** – high intention to stay and pride in working for enfinium

Areas for improvement

- **Communication** – improve internal communications regarding business change
- **Personal development** – improve career development, learning and support
- **Teamwork** – improve cross-team working and address emerging blame culture
- **Leadership** – lower scores in trust, care, and approachability

Employee Development

Employee Learning and Development

Learning and development (L&D) plays a central role in enfinium's employee value proposition. We aim to reach far beyond statutory obligations, driving a high-performance culture, with a pipeline of talent across the organisation. Through our L&D activities, we equip employees with the skills and experience needed to execute upon our vision and strategy. Our multifaceted approach includes formal learning in technical and soft skills, delivered by external partners and internal experts, along with experimental learning through role rotations and secondments.

Our cloud-based platform, Elvis, enables employees to manage their own learning process, while offering tools for the managers to support development of their teams.

With over 100 courses, Elvis offers a personalised, mobile-accessible learning experience, continually updated to meet business needs, trends, and regulatory requirements.

Examples of mandatory training in 2024 included:

- Display screen equipment
- Preventing bribery in business
- Manual handling
- Fire safety
- COSHH awareness
- Preventing money laundering
- Modern slavery
- General data protection regulation
- Equity, diversity and inclusion
- IT security

Whilst our 2024 Px survey showed opportunities to improve, we continue to invest in and enhance the training and development of our employees.

Re-skilling as part of a Just Transition

Moving the economy to net zero will create employment and opportunities, but it may also negatively impact individuals and communities where carbon-intensive industries are phased out. We are committed to upskilling and reskilling our workforce for the new opportunities that net zero will provide.

We are already contributing to a 'Just Transition', with several of our employees being former coal power operators. Our Ferrybridge 1 and 2 as well as Skelton Grange EfW facilities are built on former coal power station sites. Many of our employees have fathers and grandfathers that have worked at the same location over many decades and know the value of upskilling and reskilling for future generations.

We are delivering a 'Just Transition' through on-the-job training, learning management courses as well as technical and management training to ensure we attract, retain and advance skills across the roles and levels within the business.

A Day in the Life

Aaron Hardcastle

What's your job role at enfinium?

I am the assistant plant operator, which is basically the eyes and the ears of the control room operator. What he's seeing on his screen as opposed to what's happening in the plant, he'll send me to investigate. We also carry out monthly, daily and weekly routines. We do monthly fire system checks, both wet and dry tests, and fire alarm tests. Very much hands on and out and about on the plant.

What do you like about the role?

I like the variety of work, quite varied, hands-on work, which is what I like. In my previous career, every day was the same pretty much, whereas there's a lot more variety here which I quite enjoy. And you've got more of a career progression as well, which is something that attracted me to the industry and the company. You know, you can be trained to do most positions, I would say, but it helps, it reduces the learning curve.

What is the package like?

We have good perks. For example, we have private healthcare and dental, which extends to your immediate family. We have a good pension, various team building days that they do. We have a mental health first aider on site and I know people who have been allowed time off for bereavements, family related issues and it's never been an issue from the company to give them time off.

How would you summarise enfinium in three words?

Responsible, professional and inclusive.

Our talent pipeline strategy includes a succession planning framework to ensure leadership continuity for senior, plant management and other critical roles, maintaining the capabilities needed for the organisation's long-term goals. We have actively identified successors to progress to more senior roles, setting clear goals and collaborative development plans are in place.

As our business grows, we have more opportunities to retain our brightest and best people. This is especially important, as cost and loss of knowledge incorporated in attrition is avoidable, providing we can create and nurture progression.

> "I would never have imagined that my role could have led to the opportunities I have today."

Image: Parc Adfer community funding for Dangerpoint

Success story

Antonia Cirafici
Legal Assistant & Management Administrator, Parc Adfer

I first joined as an Admin Assistant for Wheelabrator in 2017, during Parc Adfer's construction. Then, after completing studies in Law between 2019 and 2022, I was asked by the Plant Manager to return as part of enfinium.

In 2023, I reached a crossroads in my career. I love my job, the culture and team here, but had dreams of becoming a Solicitor.

With enfinium's support, I've been able to retain my role at Parc Adfer, whilst also developing as a Legal Trainee: one foot in HQ; the other at home in North Wales. As if that wasn't enough to keep me on my toes, I also play an active role on enfinium's Sustainability Working Group, helping inform and implement the efforts of our PCF community fund.

I would never have imagined that my role could have led to the opportunities I have today and am incredibly grateful for the support enfinium have given me.

Recruiting for Success

Attracting and engaging new talent

In 2024, we have solidified our position as a preferred employer, successfully attracting top talent across the UK, as we continue to expand the business and recruit ahead of our operational launch at Skelton Grange. Our candidate selection process emphasises a culture of operational excellence and an increasing opportunity to advance through the organisation.

Career fairs are an especially important component of our recruitment, targeting students, graduates and college leavers at the onset of their career. Prospective candidates are offered a diverse work environment, skills development, support and guidance from enfinium professionals.

Apprenticeships

Our Apprenticeship scheme demonstrates our commitment to skills for life, positioning EfW as an industry of the future, whilst addressing the potential for skills shortages within the sector. We've hired 12 apprentices since the scheme's formation, over two cohorts (2022 and 2023) and are delighted that eight remain with us today. In 2024, we paused the programme to review progress, before re-launching in 2025 with a fresh set of goals and learnings.

Our apprenticeship programme spans three years and is split into two parts. Firstly, apprentices receive one year of practical workshop and classroom study at our training partner, CATCH. This is followed by two years of real-life, on-the-job training at EfW facilities. Apprentices that complete the three-year programme and pass their technical examinations, achieve a Level 3 advanced diploma in Engineering Maintenance as well as Level 3 NVQ in Electrical, Instrumentation, Mechanical or Multi-Skilled on-site qualifications.

CATCH is a specialist training college based in Yorkshire and Humber with courses designed to immerse students in mechanical, electrical and instrumentation engineering.

Interview with Ryan Skidmore

2nd Year Apprentice at Kelvin

Ryan's been part of the apprenticeship programme for two years. From having no knowledge of our industry to being part of one of our most significant construction projects in the UK.

Key Learnings

I've had to become a great communicator, to collaboratively explore and resolve challenges onsite. I've learned an incredible amount, from heat exchangers and air-cooled condensers, through to team working…and learning to be a bit more organised!

How have enfinium supported you?

My mentor has been fantastic, giving me all the detail I need to understand the issues, coupled with the variety of hands-on experience I need to learn on the job.

Key Challenges

Moving away from home at the age of 16 was a big change, however, the team here have been hugely supportive.

Would you recommend the programme to others?

100%. You learn so much, gain independence and help to make a better tomorrow. The team are all so knowledgeable. It's an amazing place to be part of.

How would you describe your role in three words?

Interesting, technical, and exciting.

Volunteering

Our full-time employees are eligible for two days of paid leave for volunteering work every calendar year, an opportunity we actively promote, both among our employees and within the local communities in which we operate.

In 2024, we held six employee volunteering events focused on foodbanks, habitat restoration, and a charity cycle ride for a mental health charity. Each event gave our employees a chance to give back to their local communities, reinforcing their sense of purposeful work.

For example, our Parc Adfer team members gave up their time to help at nearby Flintshire Foodbank, an activity they seem to have thoroughly enjoyed.

Image: Corporate cycle ride for MIND

Date: March 2024
Volunteering: Y Graig
Plant: Parc Adfer
Description: At the start of March, a group of volunteers from our Parc Adfer site took part in a day helping out at Y Graig Nature Reserve at Tremeirchion in North Wales. The volunteering effort was part of a longstanding partnership between Parc Adfer and the North Wales Wildlife Trust.

Date: September 2024
Volunteering: North Wales Wildlife Trust
Plant: Parc Adfer
Description: The latest enfinium corporate volunteering day took place on Thursday 29th August at Maes Hiraddug Nature Reserve in Dyserth, around a 30-minute drive from our Parc Adfer site.

The day was coordinated alongside our long-term partners, the North Wales Wildlife Trust (NWWT). On the day, our team of volunteers assisted NWWT with the removal of unwanted vegetation, root digging, and general upkeep of the land.

Date: November 2024
Volunteering: Knottingley Foodbank
Plant: Ferrybridge
Description: In addition to long-term relationships with nearby schools, our Ferrybridge team has a strong connection with Knottingley Foodbank. This year, we were therefore delighted to make a large donation of cleaning products and shopping vouchers.

Date: July 2024
Volunteering: Saxton Primary School
Plant: Ferrybridge
Description: On the 24th June, a team of hardy enfinium volunteers spent the day at Saxton Primary School, situated nearby to both our Ferrybridge and Skelton Grange sites, helping create a new woodland area for outside student learning.

The team took part in a range of activities including clearing vegetation from what was an overgrown plot of land and building new pathways around the area.

Date: October 2024
Volunteering: Cycle Ride
Plant: Corporate
Description: A team of cyclists braved the wet and windy conditions to complete a 43 or 75-mile route across the enfinium heartlands of West Yorkshire. The team which was made up of enfinium staff members and partners from across the industry, raised thousands of pounds for MIND, our corporate charity of the year.

Date: December 2024
Volunteering: Flintshire Foodbank
Plant: Parc Adfer
Description: Our sites have longstanding partnerships with their local foodbacks, helping those who need it the most within the communities we serve. It was especially great to see the Parc Adfer team helping at a difficult time of year.

Hear from our people

Antonia Cirafici
Legal Assistant & Management Administrator, Parc Adfer

Volunteering with enfinium has been hugely rewarding, in a way I haven't experienced with other employers. In balancing busy home and work lives, I might not have otherwise had the opportunity to work alongside the Flintshire Foodbank.

It has been incredible to be able to give back and to see the direct impact of our time on those who rely on these vital services. Doing so provided us with new perspective and has helped to build bonds between enfinium and its neighbouring communities. I enjoyed it so much that I have just been back for a second year and have encouraged colleagues to join me.

All volunteering days are aligned with the causes we support:

- Net Zero: clean and renewable energy, carbon reduction, decarbonisation of transport
- Circular Economy: waste reduction and/or recycling
- Biodiversity
- Education
- Health, safety and wellbeing
- Social inclusion and community wellbeing
- Young people
- Community cohesion

Our Environmental Impact in 2024

RESTORING BALANCE

REDUCING HARM

In 2024, our facilities delivered a net positive carbon contribution to the UK, preventing a total of 559,816 tonnes of CO_2e emissions.

Scope 1

Emissions and Resources

Climate Emissions

To measure our overall emissions impact, we assess our carbon 'balance sheet', which records Scope 1 (direct), Scope 2 (indirect emissions from our energy consumption) and Scope 3 (indirect emissions and embodied carbon from our value chain).

Our emissions are then weighed against the positive impact of the work we do, including:

- Emissions avoided by diverting non-recyclable waste from landfill
- The electricity we generate
- The heat or steam we export
- The valued resources recovered from incinerator bottom ash (IBA)
- The air pollution control residues (APCr) we produce

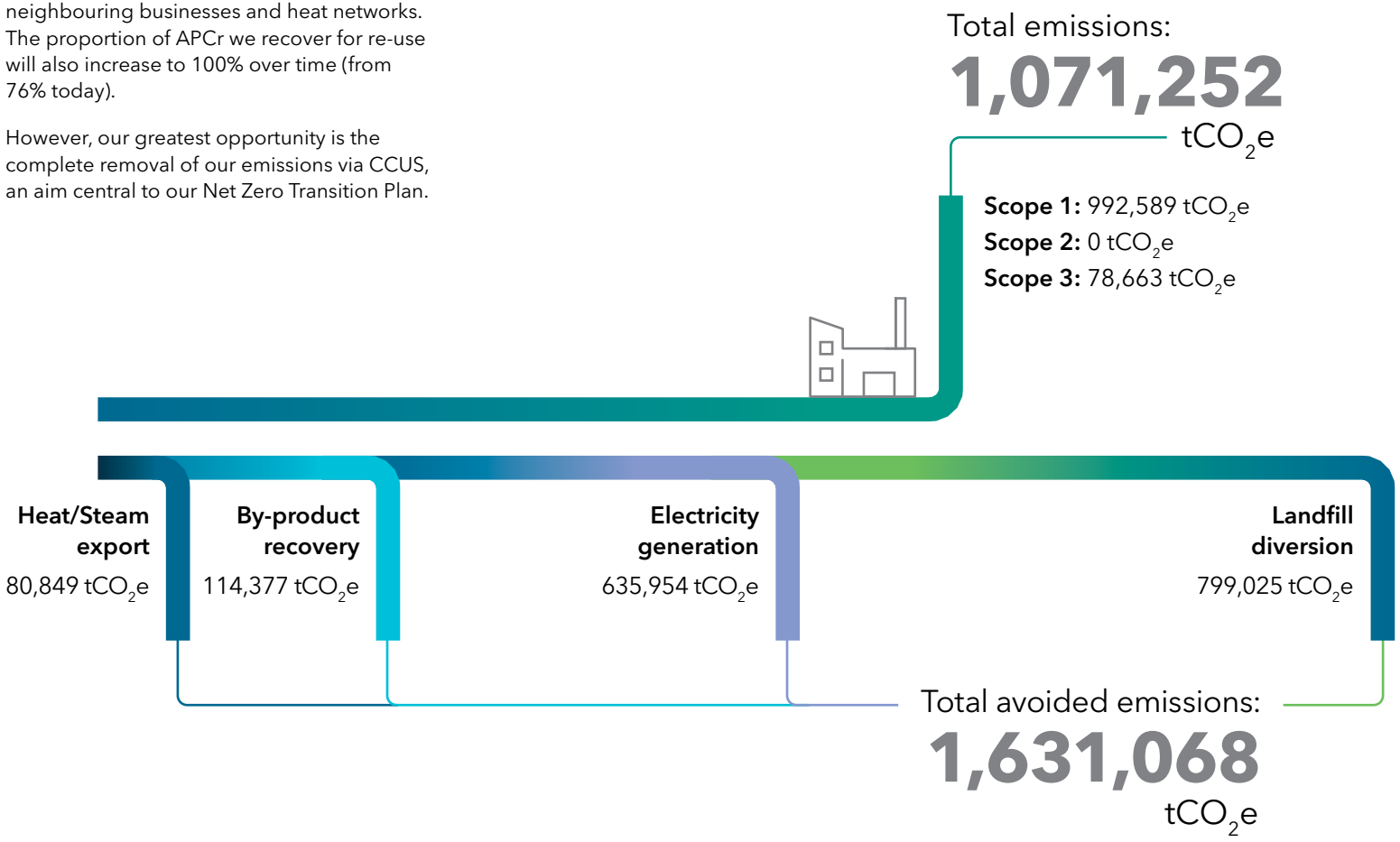
In 2024, our facilities delivered a net carbon benefit of enfinium's operations after deducting Scope 1, 2 and 3 emissions is 559,816 tonnes of CO_2e emissions. This reduction is equivalent to around 3% of the UK Waste Sector's total emissions. Figure 14 breaks down this figure in a detail.

Our combined Scope 1, 2 and 3 emissions for 2024 totalled 1,071,252 tonnes of CO_2e, a reduction of 12% vs. 2023.

As electricity generation increasingly goes renewable, the emissions we avoid via electricity generation will decrease, offset by the increased heat and steam we provide to neighbouring businesses and heat networks. The proportion of APCr we recover for re-use will also increase to 100% over time (from 76% today).

However, our greatest opportunity is the complete removal of our emissions via CCUS, an aim central to our Net Zero Transition Plan.

Figure 14. Total enfinium emitted and avoided emissions in 2024



Scope 1

Emissions and Resources

Our Scope 1 emissions in 2024

Our Scope 1 emissions are predominately from combustion at the stack, residual waste deliveries to the facility and auxiliary fuels used on-site. The combustion of waste results in the following emissions with global warming potential and therefore categorised as GHGs.

Carbon dioxide (CO_2) is the main climate-relevant emission resulting from thermal combustion of waste in oxygenated conditions and typically makes up at least 95% of the total direct emissions.

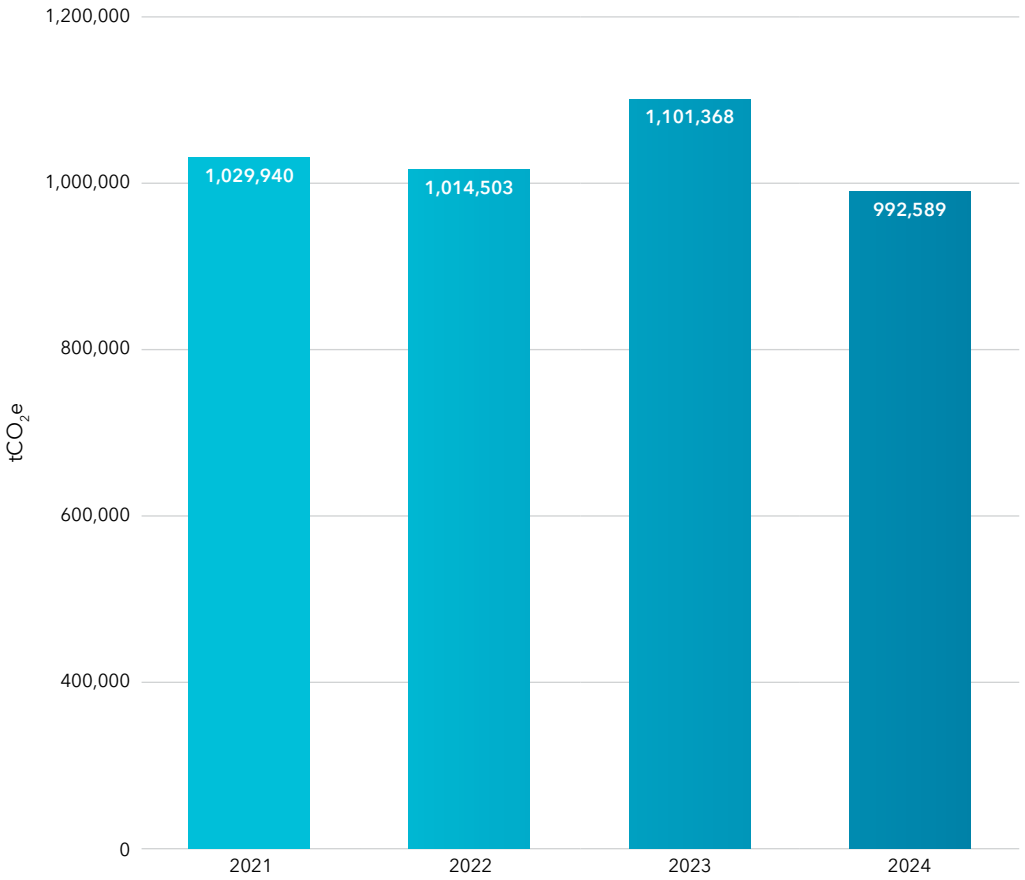
Oxides of nitrogen including NO and NO_2, expressed as NO_2, are dependent on combustion conditions and the flue gas treatment systems installed. We use Selective Catalytic Reduction technology (SNCR) which reduce NOx emissions to some of the lowest in the UK. SNCR use urea or ammonia abatement to ensure compliance with permitted emission limit values (ELVs).

Our Continuous Emissions Monitoring Systems (CEMS) installed at each facility provide CO_2 and NO_2 mass emissions data. Additional emissions are generated through the combustion of auxiliary fuels (fuel oil and diesel) for the use in auxiliary burners that are required during start up and shut down to maintain combustion temperatures in line with regulatory requirements.

Fugitive emissions from air conditioning equipment and process air chillers within the admin block and offices are also generated; however these are low in comparison to the combustion process.

In 2024, our Scope 1 net emissions are slightly higher than originally modelled within our net-zero plan. This was due to higher waste tonnage processed and better operational performance across the fleet. Hence, whilst emissions increased, this was a very positive result for our business and the environment.

Figure 15. Scope 1 emissions, 2021-2024



Scope 1

Operational Efficiency

Image: Ferrybridge 1 and 2 electric vans

Electric vehicle chargers

In 2024, we installed further EV chargers across our six EfW facilities; two more at Ferrybridge 1 and 2, two more at Kemsley and two more at Parc Adfer. EV chargers are built into the design of both construction projects at Skelton Grange and Kelvin. We anticipate EV chargers being used by mobile plant as well as employees travelling to the facilities for work.

Electric vans

In our Net Zero Transition Plan we identified the opportunity to lower our emissions on-site through the purchase of electric mobile plant. In 2024, we purchased two electric vans, one at Ferrybridge 1 and the other for Ferrybridge 2. Electric rather than petrol or diesel vans at our EfW facilities have a number of benefits to the business:

- Ability to use electricity produced from the EfW facility
- Ready availability of electric vehicle charging on-site
- No need for a clutch and gearbox, which makes driving simpler and more relaxing
- No need for a big range, with most site vans covering less than 20 miles each day
- Same size as the petrol and diesel versions with no loss of space for logistics

Plant vehicles

Our plant vehicles use diesel for a variety of on-site purposes including the movement of IBA and APCr. The use of HVO, electric or hydrogen powered vehicles provide an opportunity to lower emissions further. We also operate electric forklift trucks at our facilities.

Auxiliary Fuels

Auxiliary fuels are used during start up and shut down to maintain combustion temperatures in line with permits. We are investigating modifications to reduce downtime, lower diesel oil consumption and increase plant efficiencies, corresponding with our pursuit of lower emissions.

Scope 1

Operational Efficiency

Reducing Wind Impact

In 2023, enfinium were among the first UK EfWs to implement gale breakers, initially at our Ferrybridge 1 site. The potential for gale breakers to improve energy efficiency of our Air-Cooled Condensers (ACCs) was first identified by our plant Operations Manager, Lee Rhodes. The recommendation was adopted as a trial and is now rolled out at all sites (exc. Parc Adfer). A full review of improved performance is scheduled for 2025. Lee has since become a valued member of our Sustainability Working Group.

Read enfinium's press release about reducing wind impact on ACC performance here.

Plant Efficiency and 'R1' Status

The concept of Waste Recovery is critical to our license to operate and to our preferential position in the Waste Hierarchy. Each our facilities achieve R1 status due to the efficiency with which they recover heat and electricity. The Waste Framework Directive (WFD) sets a threshold for 'R1 status', equal to or above the level of 0.65. In each year of enfinium's operations, we have exceeded this crucial figure and we are delighted to report that 2024 is no different.

Figure 16. enfinium facilities R1 values, 2021-2024

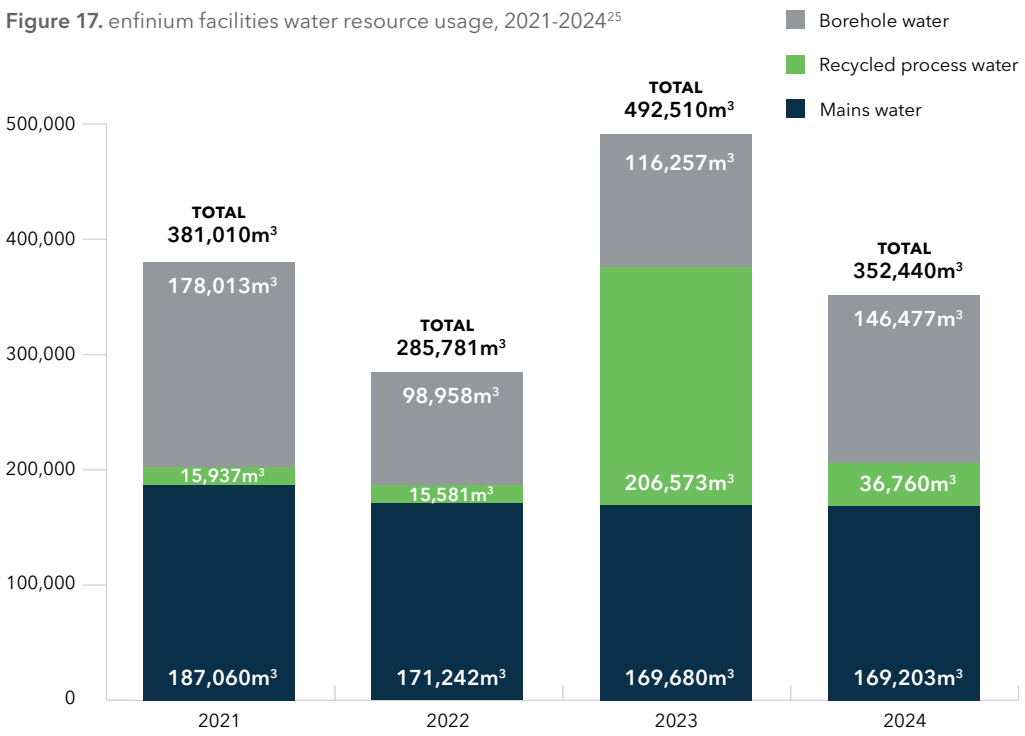
FERRYBRIDGE 1			
2021	2022	2023	2024
0.80	0.79	0.89	0.96

KEMSLEY			
2021	2022	2023	2024
0.82	0.9	0.93	0.83

FERRYBRIDGE 2			
2021	2022	2023	2024
0.85	0.82	0.90	0.86

PARC ADFER			
2021	2022	2023	2024
0.67	0.67	0.71	0.70

Figure 17. enfinium facilities water resource usage, 2021-2024[25]



Water Use

We use a large volume of water in power generation and cleaning, however, we do not take this important resource for granted. We continually monitor where our water comes from and optimise the sustainability of our water supply at every opportunity. For example, in 2025, we plan to extend water flow meters at our six EfW facilities to provide better insight on water usage, pinpoint leakages and better preserve supply.

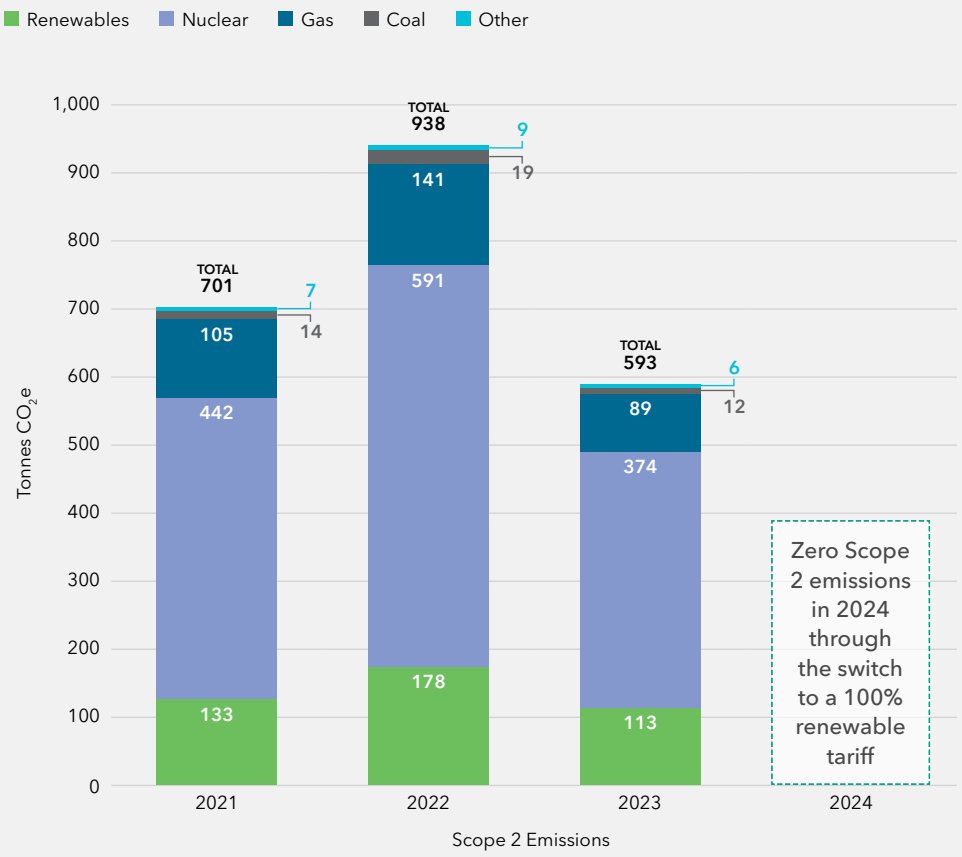
We reserve mains/towns water to support processes requiring demineralised water, such as boilers, cooling media in steam flash tanks, and fire safety systems, harvesting rainwater to supplement critical processes.

25 enfinium are installing flow meters across all facilities to better quantify water usage.

Scope 2

Purchased Electricity

Figure 18. Scope 2 emissions, 2021-2024



Purchased electricity

In June 2023, we signed a two-year deal to move to a 100% renewable, REGO backed tariff[26] for all imported electricity to support operations during scheduled and unscheduled downtime across all four operational facilities.

During normal operations, the electricity generated by the EfW process supplies our operational load for operating cranes, pumps, compressors, air conditioning, and fans. Imported electricity is only needed when boilers or turbine-generators are not operating.

Our Scope 2 emissions use market-based methods reflecting the GHG emissions associated with our electricity supplier and product. In 2024, with a full year of 100% renewable REGO backed tariff in place, we are delighted to report 100% renewable Scope 2 emissions.

Scope 2: Solar Panels

We plan to install solar panels across our four operational plants in 2025 - 2026, with the potential to substitute up to 2MW of additional parasitic load to our energy generation. However, we will only do so within the bounds of our strict supplier code of conduct. We apply a strict supplier code of conduct to ensure sustainable sourcing.

26 REGO means Renewable Energy Guarantees of Origin, a scheme providing certificates which demonstrate that electricity has been generated from renewable sources operated by Ofgem, the UK's gas and electricity markets regulator.

Scope 3

Emissions by Category

2022

- Purchased goods and services, e.g. construction and major bulk materials
- Fuel and energy related activities (not included in Scope 1 and 2)
- Business travel

2023

- Upstream transportation and distribution, e.g. waste haulage to and from all operational plants
- Downstream transportation and distribution, e.g. upstream emissions of purchased fuels

2024

- Employee commuting

2025 and beyond

- We will continue to engage actively with third party suppliers up and downstream to better understand our scope 3 baseline and further enhance the rigour of our reporting.
- Our Carbon-14 analysers, featured on page 36, will further enable our ambition.
- Our Net Zero Transition Plan will be updated to include Scope 3 emissions in its next revision, due in 2027.

Scope 3 emissions include all indirect greenhouse gases (GHG) caused by our business, throughout the value chain, for example whilst transporting residual waste.

This element of our performance can prove the most challenging to monitor. Therefore, we are continuously improving our measurement and coverage of Scope 3 emissions via a phased approach.

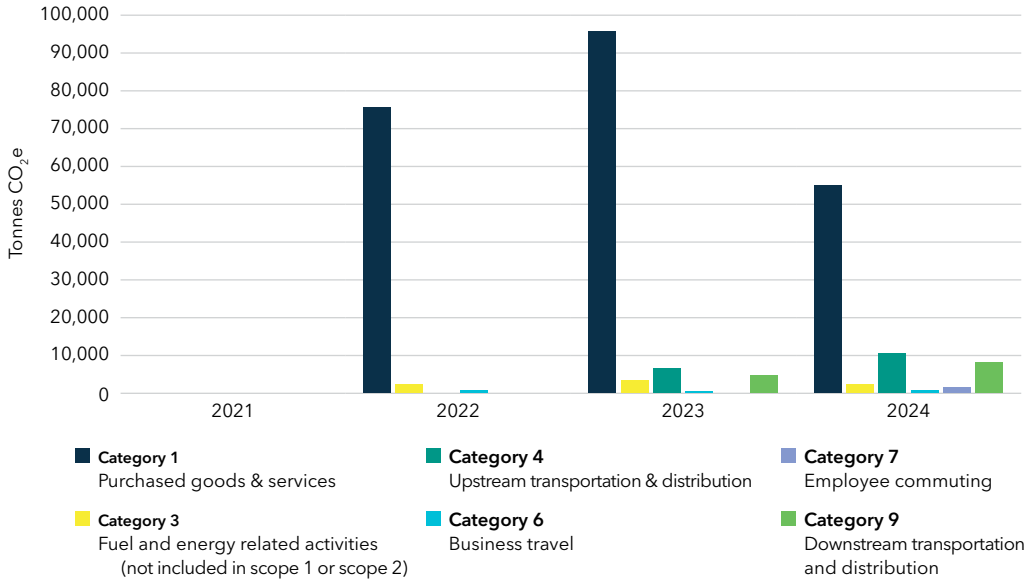
Since 2022, we have significantly expanded our understanding of our Scope 3 emissions footprint, introducing measurement in accordance with GHG Protocol guidelines. Wherever possible, we improve the accuracy of our data, for example, by using more precise meter readings and relying less on generic conversion factors to derive associated emissions. Meters help with the accuracy of consumption, but do not eliminate the need for conversion factors.

A log of our progress to date is included above.

In 2024, we expanded our Scope 3 reporting to include employee commuting, building on our previous additions of upstream and downstream transportation and distribution last year. We are always looking to improve and expand our data collection and are working with suppliers to provide more rigour to data collation for all Scope 3 categories.

For Category 1, purchased goods and services, we include consumables (lime, powder activated carbon, urea and ammonia) and water in category 1A and construction materials used at Skelton Grange and Kelvin within category 1B. Category 1 tonnes CO_2e declined in 2024, largely due to the lower construction materials required for the build of Skelton Grange, which will reach construction operation date in summer 2025. We expect consumables to increase somewhat to accommodate operations at Skelton Grange in 2025 and onwards.

Figure 19. Scope 3 emissions (tCO2e) by category



Scope 3

Emissions for Consumables, APCr and IBA

Consumables used during combustion

EfW facilities use lime, powered activated carbon, ammonia/urea to limit stack emissions, well within the safe limits prescribed. These consumables played an important role in our achievement of A ratings throughout the estate in both 2023 and 2024. They also help keep our plants in good operating order, reducing downtime and extending their serviceable life. In turn, this reduces the annualised embodied carbon of our plants.

Our use of consumables is included under Category 1A of our Scope 3 emissions and whilst they have a substantial impact in themselves, the net effect is overwhelmingly positive in reducing our Scope 1 emissions. Usage tends to remain constant both throughout and between years, as shown in the table below:

Figure 20. Consumables usage 2022-2024

	2022	2023	2024
Lime	59kg/t	54kg/t	58kg/t
PAC	1,541g/t	1,528g/t	1,437g/t
Urea	1kg/t	1kg/t	1kg/t
Ammonia	2.66kg/t	2.25kg/t	1.72kg/t

APCr and IBA contract renegotiations

In 2024, we placed Sustainability front and centre during our APCr and IBA contract negotiations. This was achieved via:

1. Product traceability
2. Recovery of the IBA material
3. Minimising transport emissions

All suppliers within the tender process provided responses to a sustainability data request template that included information about environmental policy, water management, and recovery benefit, in addition to wider sustainability plans for their businesses. Further requests including environment product declarations, lifecycle assessments and process diagrams were provided to give a clear picture of how APCr recovery and disposal is completed.

Every supplier is now required, as part of the contract, to report on their transport carbon footprint monthly; model carbon savings from their process by site; and complete an annual sustainability data input reporting template. The reporting template is used to monitor and manage supplier's progress against our own sustainability goals and targets across the lifetime of the contract.

Image: Skelton Grange APCr sign

As part of our IBA tender process, we introduced clear sustainability targets and criteria, benchmarking supplier performance, including the following initiatives:

- Additional eddy current separators and shredders to improve IBA plant recovery performance
- Exploring different truck fuel types (diesel, hydrogen, HVO and electric HGVs) with cost comparisons
- Supporting university research projects to expand the dense building block use cases for recovered IBA material

All suppliers within the tender process provided responses to a sustainability data request template that included information about environmental policy, water management, recovery benefit, as well as wider sustainability plans for their businesses. Additional requests including environment product declarations, lifecycle assessments and process diagrams were provided to give a clear picture of how IBA recovery and disposal is completed.

Heat Networks

Kemsley Steam Export

At present, the UK has just six EfWs exporting in excess of 50GWh of heat, with total heat exported across the 13 EfWs that do export 1,946 GWh. In 2024, our Kemsley EfW was the UK's second highest exporter, at 409GWh, sent to its neighbouring DS Smith paper mill. Heat and steam export offers significant potential at many of our plants over the coming years, as outlined in the heat networks section below.

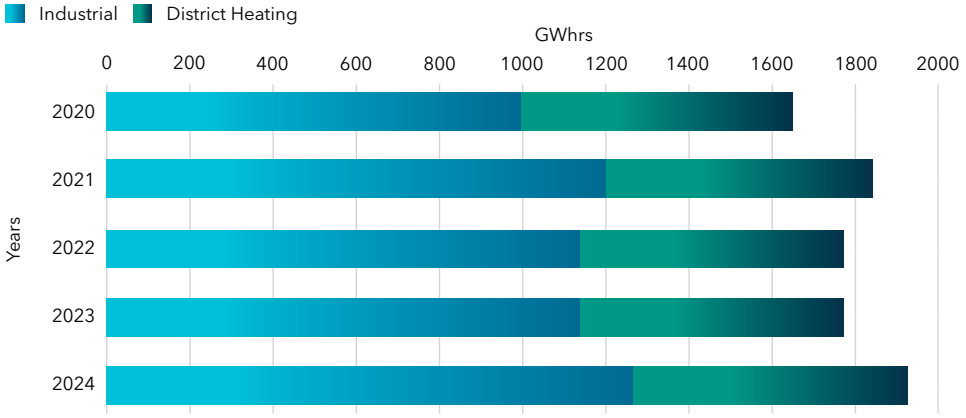
Heat Networks

Heat networks are a critical component of net zero, well-suited to urban areas and industrial zones, where large pipes transit energy efficiently and from a diverse range of sources, including EfWs.

The direct transmission of heat between our EfW plants and neighbouring heat networks increases our own plant efficiency and is a by-product of the waste we process, meaning it provides a lower-carbon alternative to gas boilers, avoiding societal emissions.

At present, a relatively small amount of heat is exported by UK EfWs and less still to heat networks, with less than a quarter of EfW plants exporting heat, relative to the large majority in many EU countries, such as Sweden and Denmark. However, 2024 was an especially exciting year, with successful pilots at our neighbouring Aire Valley (Skelton Grange) and West Bromwich (Kelvin) networks.

Figure 21. UK heat exports by demand type, 2020-2024



Source: Tolvik Report, UK Energy from Waste Statistics 2024, May 2025.

Figure 22. UK heat exports by major EfWs, 2020 - 2024

EfW	Est. Export GWh$_{th}$ 2020	2021	2022	2023	2024
Wilton 11	373	332	289	335	458
Kemsley	**123**	**235**	**344**	**363**	**409**
Runcorn	480	616	502	429	397
Eastcroft	405	390	361	366	380
Sheffield	95	98	91	93	85
Gremista	50	42	49	52	50*
Devonport	54	54	52	46	47
SELCHP	40	44	39	42	45
Leeds	14	16	25	30	32
Earls Gate					20
Coventry	8	12	13	14	16
NewLincs	7	3	4	4	4
Other	2	2		3	3
Total	**1,651**	**1,845**	**1,770**	**1,777**	**1,946**

Annual performance report (APR) (* estimate).

Skelton Grange: Aire Valley Heat and Power Network

Located southeast of Leeds city centre, Aire Valley is home to 400 businesses employing 15,000 people in the manufacturing, wholesale and distribution sectors.

Since 2022, we have been working with SSE Energy Solutions to develop the Aire Valley Heat and Power Network. Our Skelton Grange EfW facility will provide a reliable long-term source of heat for local industry and communities as a lower carbon alternative to gas boilers.

Yorkshire Water alone estimate that the scheme will save 5,000 tonnes of carbon emissions per annum from their Knostrop wastewater treatment plant – the equivalent annual electricity use of 3,200 homes[27]. The network could expand into the existing city-wide Leeds PIPES heat network[28]. The scheme was awarded £19.5 million from the UK Government's Green Heat Network Fund (GHNF) in February 2025[29] and supports West Yorkshire's ambition to become a net-zero region by 2038[30].

SSE have now received planning permission for the network and works are expected to start in 2025, with a 12-month build and expected live date of Q4 2026. Nearby Leeds PIPES is already active, with further expansion plans expected to join both networks further down the track.

Yorkshire Water alone estimate that the scheme will save

5,000 tonnes

of carbon emissions per annum from their Knostrop wastewater treatment plant

27 SSE Energy Solutions, New £25m low carbon energy network to serve businesses of West Yorkshire.
28 LEEDS Pipes Network, Leeds PIPES District Heat Network: The future of heat is here.
29 Association for Decentralised Energy (ADE), £34m awarded brings total GHNF investment to over £380m, boosting low carbon heat networks across England.
30 West Yorkshire Combined Authority, Tackling the climate and environmental emergency in West Yorkshire.

Kelvin: West Bromwich Heat Network

The £40 million West Bromwich Heat Network will provide low carbon district heating.

Since 2022, we have been working with Sandwell Metropolitan Borough Council to ensure Kelvin provides a reliable long-term source of heat to the local council, community and housing developments, as an alternative to gas boilers.

In 2024, Sandwell Council received a £5 million commercialisation grant through the Government's Green Heat Network Fund (GHNF), supporting development of the heat network. A heat demand of 35 GWh/year is forecast, over half from public-sector buildings including Sandwell College, Sandwell General Hospital, Edward Street Hospital, Council tower blocks, Council corporate property and Town Centre redevelopment.

Construction of the heat network is expected to begin in 2025 and run through 2037. Kelvin is currently expected to produce heat in 2027, pending on the delivery of the Sandwell network, with whom we meet on a regular basis.

A heat demand of

35 GWh/year

is forecast, over half from public-sector buildings

Investing Toward Net Zero

Our CCUS Progress in 2024

Eligibility criteria
May 2024 – Complete

Environmental permitting underway
Q1 – Q2 2025 – In Progress

Permitting application for consultations submitted
in Q4 2025

Parc Adfer critical timeline 2024 2025 2030

Deliverability criteria
December 2024 – Complete

Bid Decision Received within Track 1 Expansion Assessment
Summer 2025 – Pending Decision

Potential construction operation date
Summer 2030 – Pending Decision

2024 has been our most innovative and exciting year yet with respect to net zero, during which enfinium has launched two significant carbon capture projects, along with research and planning to facilitate our next wave of development.

Industrial Carbon Capture ICC Bid

The UK Department for Energy and Net Zero (DESNZ) operates a Waste Industrial Carbon Capture (ICC) Business Model, under which subsidy and revenue support is available to eligible projects, including EfWs.

Contracts are awarded via a competitive auction process, with projects demonstrating lowest cost per tonne of abated carbon more likely to be successful. The distance to a suitable industrial cluster has a significant impact on the cost competitiveness of the CCUS scheme. The first of two national CCUS clusters is located in North West (Liverpool, Runcorn, Chester), in proximity to our Parc Adfer EfW. In 2023, we conducted an initial evaluation and in April 2024, submitted a proposal for funding, including a £200m investment in the technology, capable of capturing up to 235k tonnes of CO_2 every year.

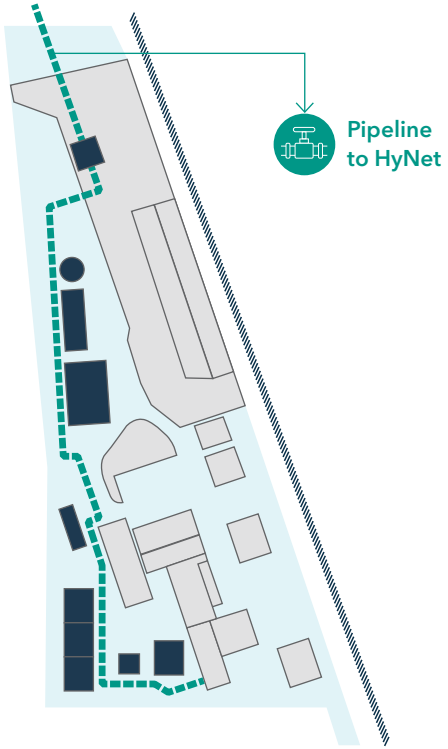
As part of the bid, enfinium have agreed a commercial relationship with HyNet, a consortium of parties building the CO_2 transportation and storage network, led by Italian energy conglomerate ENI. We have committed to working with HyNet to explore an extension from our Parc Adfer EfW to HyNet's proposed CO_2 pipeline, 7km away.

Once connected to the pipeline, CO_2 will be transported to depleted gas reservoirs in Liverpool Bay owned and managed by ENI. The Liverpool Bay reservoirs have an independently verified storage capacity of 4.5 million tonnes per annum of CO_2 and potential to increase to 10 million tonnes per annum post-2030.

As an alternative to a successful bid, other commercial models may be considered for review, including a merchant CCUS facility leveraging the voluntary carbon market, made possible via the sale of greenhouse gas removal credits.

Parc Adfer

Processing up to 235,000 tonnes of unrecyclable waste and generating up to 21MW gross electricity, annually.



Carbon Capture
Commercial operation of carbon capture rate. Target delivery 2030

UK's first CCUS pilot at Ferrybridge 1

We partnered with Kanadevia Inova in September 2024 to launch the UK's first energy from waste carbon capture pilot at Ferrybridge 1. The pilot, a containerised, scaled-down version of CCUS technology is today capturing up to one tonne of CO_2 emissions from our Ferrybridge 1 operations each day.

The pilot has used a variety of amine solvents and will collect real world data on performance, such as CO_2 capture rate, energy consumption, and rate solvent degradation.

This insight will support our wider ambition to install CCUS at a commercial scale across our six facilities, enabling us to become a carbon negative business in the 2030s. The pilot has now been moved to Parc Adfer to continue trials at a different plant with different amines to further our knowledge.

"Initial results have been promising as we seek to refine the technology and evaluate alternatives, in tandem with commercial modelling. As an early mover, we have acted as a catalyst to UK R&D, partnering across the industry to accelerate net zero."

Darrell Pariag
Technical Manager for Ferrybridge
KVI CCUS Pilot Plant

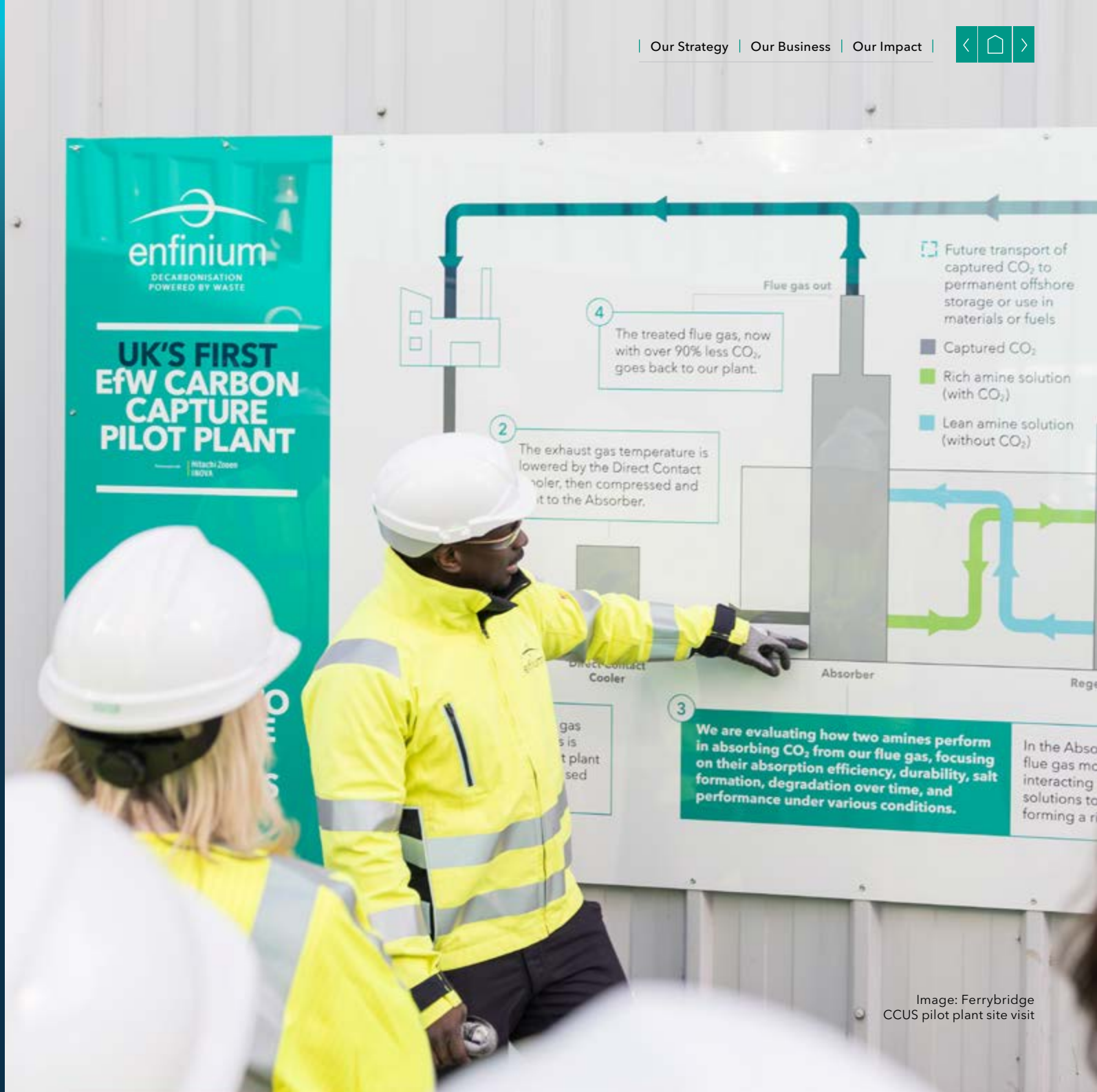


Image: Ferrybridge CCUS pilot plant site visit

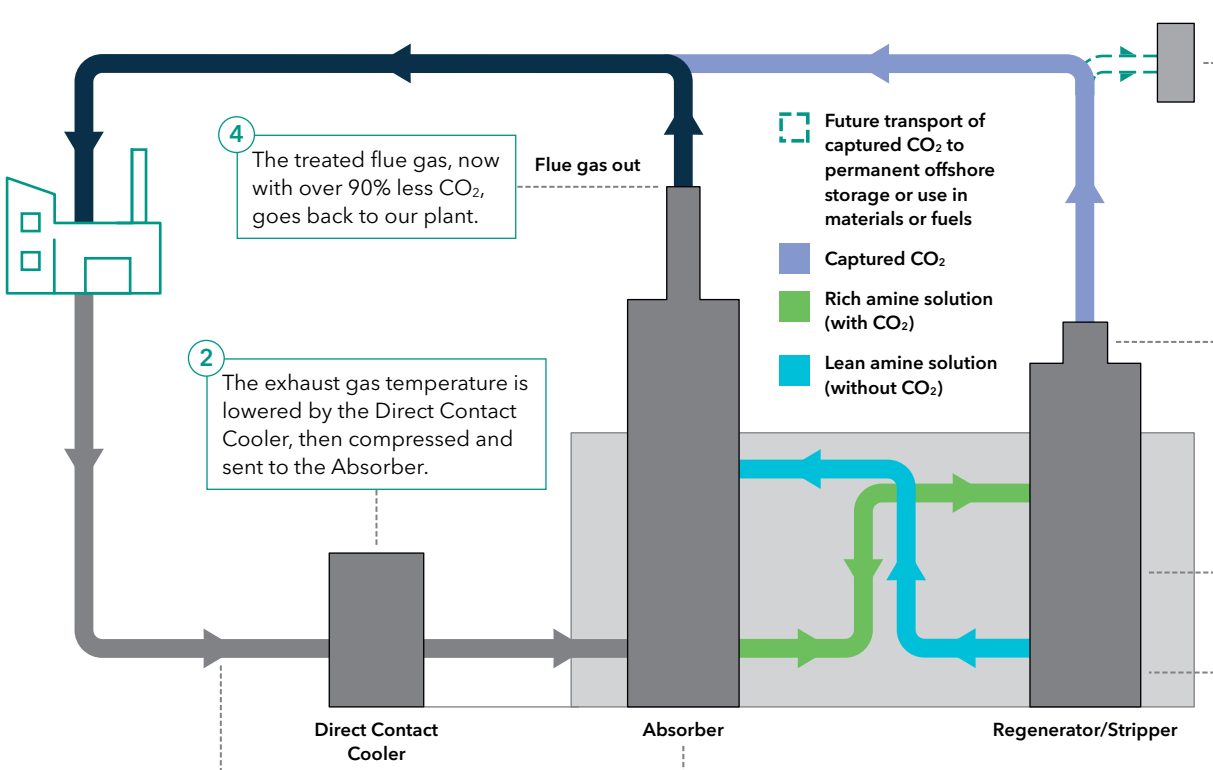
The CCUS pilot plant was installed and connected to Ferrybridge 1 within three months, and is set to operate for 12 months, with the option of a six-month extension.

During the trial, we have collaborated and showcased the pilot with other EfW operators, with view to scaling CCUS at EfW facilities across the country.

Our next step is to move the CCUS pilot plant from Ferrybridge to Parc Adfer, testing the technology on a different EfW build type. This also enables us to test alternative technologies at Ferrybridge in the near future.

Pilot plant technical details

- The container used for the pilot study is 12m long, 3m wide and 3m tall. The absorption column is 12m high to its tip. The weight of the container is 20 tonnes.
- The plant takes a partial flue gas feed from line two of Ferrybridge's FGR, 200Nm^3/hr
- The pilot includes an autonomous control and process monitoring system, meaning that it automatically adapts to its conditions without human intervention
- The CO_2 stream is recombined with the exhaust gas returned to the FGR and reintroduced to the furnace
- There is no direct release of CO_2 into the atmosphere
- The initial amine solution used is monoethanolamide (MEA)
- Electrical power required 170 kW/hr
- The trial captures one tonne/day of CO_2



1 A portion of exhaust gas from our EfW process is redirected to the pilot plant instead of being released into the atmosphere.

2 The exhaust gas temperature is lowered by the Direct Contact Cooler, then compressed and sent to the Absorber.

3 In the Absorber, the cooled flue gas moves upward, interacting with the lean amine solutions to absorb CO_2, forming a rich amine mixture.

We are evaluating how two amines perform in absorbing CO_2 from our flue gas, focusing on their absorption efficiency, durability, salt formation, degradation over time, and performance under various conditions.

4 The treated flue gas, now with over 90% less CO_2, goes back to our plant.

5 The CO_2-rich amine solution is sent to the Stripper column, where heat separates CO_2 from the amine.

6 CO_2 is released from the top of the column, and the lean amine is recycled back to the Absorber.

7 The captured CO_2 is reintroduced into the flue gas stream exiting the Absorber column and returned to the flue gas recirculation line.

8 In the future, we plan to transport the captured CO_2 to permanent offshore storage or for use in materials or fuels.

Investing Toward Net Zero

Waste by Rail Pilot

In July 2024, we worked with SUEZ UK and Freightliner on a trial to deliver 700 tonnes of residual waste to the Ferrybridge 1 facility. The trial allowed us to learn more about the safety, logistics and operational requirements necessary to scale up deliveries of waste to the facility in the future. We are actively investigating how we scale up residual waste deliveries to Ferrybridge in the coming years, taking more HGV trucks off the local highways and further-lowering CO_2 emissions.

Residual waste deliveries by rail transport benefits include:

- Reducing road traffic (the trial displaced at least 40 HGV trucks)
- Lowering associated CO_2 emissions
- Helping meet West Yorkshire's 2038 net-zero target
- Potential access to new regional markets, such as South East England, at a lower cost and environmental impact than constructing additional EfWs.

Image: Ferrybridge 1 and 2 EfWs

Our next step is to investigate the commercial landscape, potential customers and logistics partners to operationalise the trail on a long-term basis. However, the trail has proven highly promising. For example, as the waste market reaches capacity in the North of England, capacity gaps remain in the Southeast. Therefore, rail opens new opportunities whilst minimising emissions.

Image: Ferrybridge railhead waste by rail

Biodiversity at Parc Adfer

Biodiversity refers to the number of plants and species within a specified area. Sadly, researchers consistently find the UK to be within the bottom 10% of countries globally in terms of biodiversity intactness, with c.19% of our wildlife lost since 1970 and c.50% since the industrial revolution. Insects, for example, may seem insignificant to some.

enfinium is committed preventing the disturbance of natural ecosystems caused by our operations and, where unavoidable, to promoting biodiversity net gain, according with our ethos and planning commitments.

Bionet Award

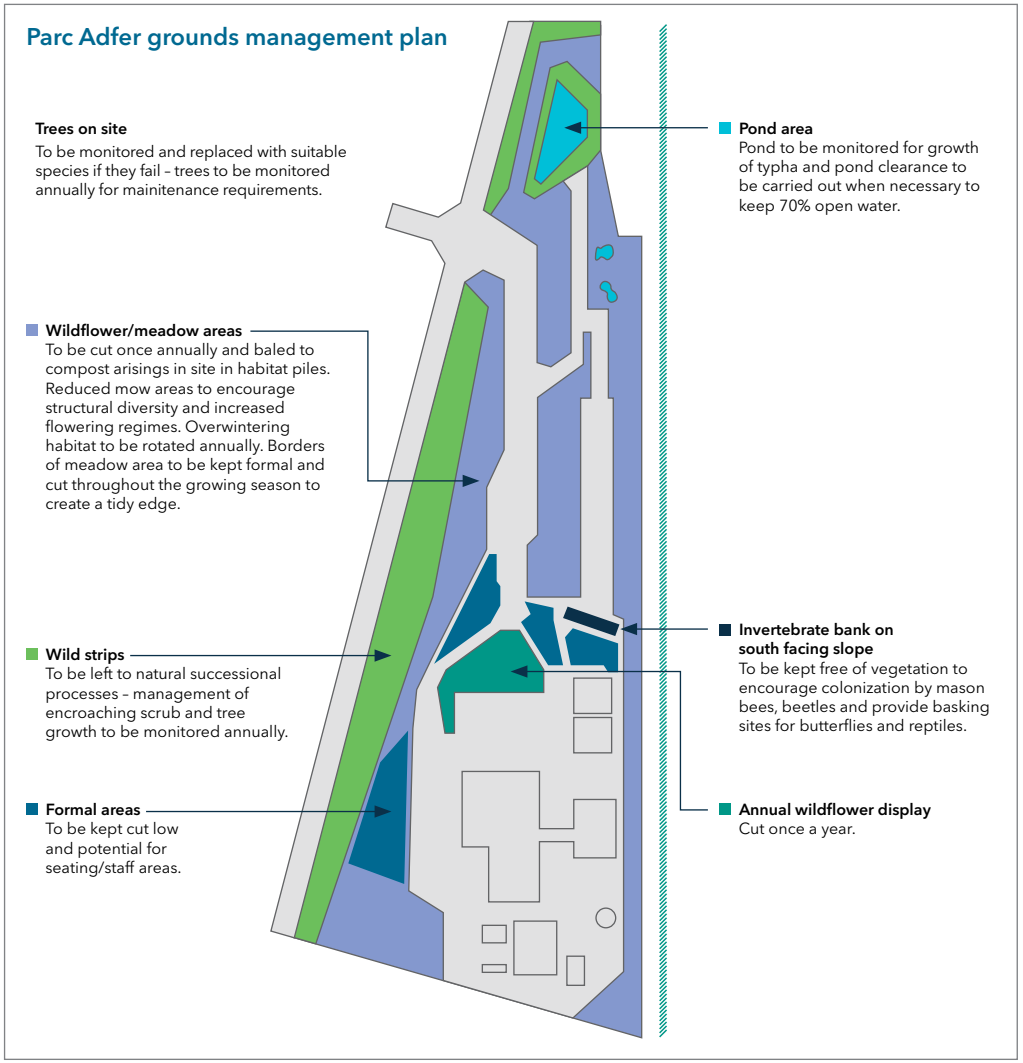
In 2024, we were delighted that our Parc Adfer EfW facility won a Bionet Business Award for "outstanding positive biodiversity impact within North East Wales."

At its inception, there were 6.5 hectares of green space surrounding the Parc Adfer EfW facility, largely consisting of a mown grass monoculture, an alien environment to many species. In 2023, we entered a partnership with North Wales Wildlife Trust (NWWT) and Enfys Ecology to manage 2.5 hectares of the site, in a way that enriches biodiversity.

This consists of:

- Two hectares enhanced using locally sourced seeds and wildflower plug plants from nearby SSSI's (Scientific Sites of Special Interest) and NWWT reserves
- Acres of vegetation is left uncut to provide overwintering habitat for a wide range of species
- 0.25 hectares of ponds/wetlands are managed for structural diversity and to create basking sites for invertebrates and reptile populations
- 800m^2 of open mosaic habitat, including numerous hibernacula, seasonally wet scrapes and diverse vegetation

The work was assessed by an external ecological consultancy, SLR, who concluded, biodiversity increased by an incredible 25% in 2024.



Biodiversity at Kemsley

Pollinator Monitoring Devices

Pollinators are especially important, as without them, crops would not grow. And so, we take practical measures to ensure they can thrive alongside our operations.

In September, we installed pollinator monitoring devices under a two-year programme to measure Kemsley EfW's impact on bee activity.

A specialised bioacoustic algorithm recognises the sound of specific pollinators and collects temperature, humidity and luminosity sensor readings throughout the year. The data will provide valuable data to playback our biodiversity impact on the local community.

Real-time pollinator monitoring supports enfinium with:

- Identification of local populations, conserved to provide ecosystem services
- Insight as to the ecological impact of our facilities, which can be used to create benchmarks for our other sites
- Gap analysis to inform sustainability goals and initiatives
- Regulatory and planning compliance, in alignment with environmental regulations and reporting requirements
- Community engagement, acknowledging the important role biodiversity plays within local communities
- Employee engagement, providing a sense of community and purpose

The project will implement 10 pollinator monitoring devices at our Kemsley EfW facility to determine the criteria underlying the success of the bee population. For example, bee abundance levels across different habitats and land management practices.

Through our analysis of the data, we will generate early insights that can educate key stakeholders and influence the colonies' success.

Kemsley Kestrels

On the 24th and 25th June, three young kestrels were found at our Kemsley site. One was found tucked away in the Stores, followed by another soon after in the FGT area. A third Kestrel was then found onsite the next day. The birds of prey were showing signs of distress, so we made enquiries with local wildlife centres and sanctuaries in the hope of finding them a new home where they could flourish.

Thankfully, Columbines Wildlife Care, an independent wildlife rescue centre based in Sittingbourne, Kent, were able to help. The Columbines Wildlife Centre offers short term triage through to longer term rehabilitation and release and proved a perfect home for these incredible birds.

enfinium provided a grant funding donation of £6,000 to cover food, medication and veterinary bills as well, whilst enabling the centre to begin the creation of a dedicated Wildlife Hospital building.

Sarah Henderson, Founder of Columbines Wildlife Centre said, "We really can't thank you enough, it is heartwarming that enfinium recognise the importance of supporting our native wildlife and have taken action to help us to continue to rescue, provide care and rehabilitate wildlife in need."

Hear from our people

Luke Clothier
Environmental Officer, Kemsley

After completing a degree in Environmental Science, I looked for a career where I could make a meaningful difference.

I love that my work here at Kemsley is well aligned to net zero and that enfinium are genuine in their pursuit of operational excellence. Much of my work involves taking a proactive approach to emissions, carefully monitoring output, reporting operational events, and ensuring risks are well-mitigated. All data is available to the public via the EA's Pollution Inventory.

Everyone here at Kemsley has genuine care for the environment and we regularly collaborate across all enfinium sites to ensure best practice is continually evolving.

I've been delighted that my passion for biodiversity has also been put to good use. For example, following a biodiversity audit of the Kemsley site, we introduced Agrisound pollinator devices to monitor and promote our bee populations.

Finding three Kestrels in June 2024 was somewhat unexpected. While the sanctuary initially asked for £2,500 in support, we were delighted to make a larger contribution of £6,000, ensuring not just the success of these birds, but of many others in the future.

Our Community Impact

ENGAGING COMMUNITIES

DELIVERING IMPACT

We have an important role to play, as an integral part of the communities we serve. Energy from Waste must make life better for society, removing emissions through landfill diversion, generating products for re-use and recovering energy.

However, we must do so by enhancing, rather than disrupting lives. Our social licence to operate depends on strong relationships with neighbours, and our employees enjoy the purpose it provides.

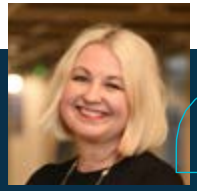
Consistent A Ratings for Air Quality

At enfinium, we acknowledge that being a good neighbour is an essential part of our operating model. We take care to ensure air, noise and smell do not pose risk or nuisance to the public, or to neighbouring businesses.

Air Quality

All enfinium facilities comply with stringent air quality limits, overseen by the Environment Agency (EA) and Natural Resources Wales (NRW). We work with the EA on an ongoing basis to ensure that our facilities are operating well within the standards determined by our permits.

In 2024, we received the highest possible environmental performance rating ('A') from the EA and NRW across all its operational facilities, for the second year running. An 'A' rating signifies that a facility has demonstrated exceptional environmental management, consistently meeting or exceeding regulatory requirements and posing a minimal risk to the environment. This is an achievement we are immensely proud of.



Our environmental strategy has always been designed to ensure we have a positive effect on the world around us. That is why our energy from waste facilities are governed by some of the world's strictest environmental regulations, and we are proud to have been recognised by the Environment Agency and Natural Resources Wales for our efforts.

I would like to thank all employees whose shared dedication to operational excellence have meant we continue to operate sustainably to decarbonise the UK's unrecyclable waste."

Dr Jane Atkinson CBE
Chief Operating Officer

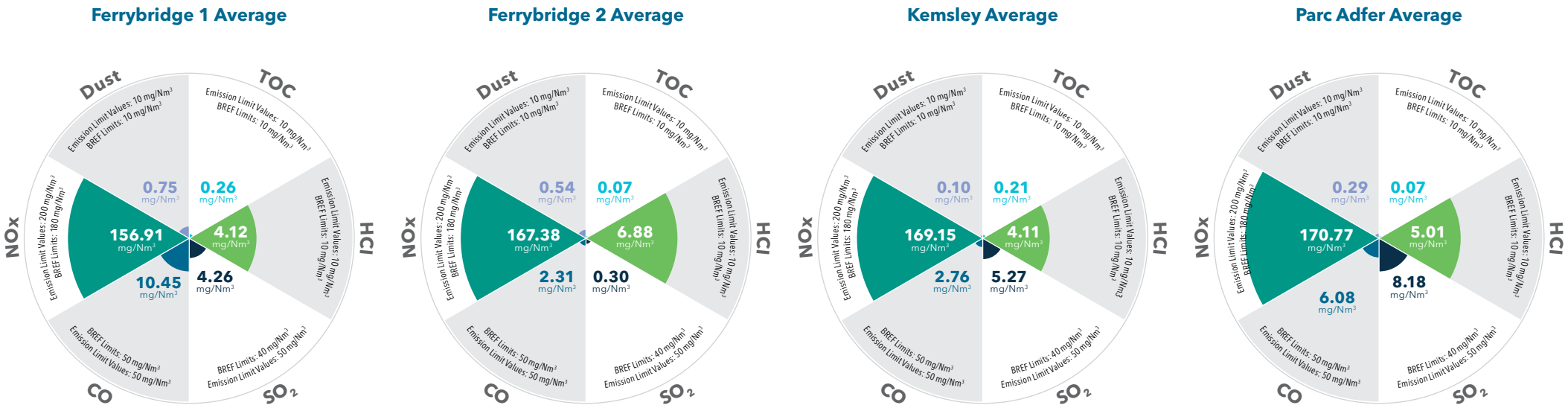
Air Quality Continued...

Our Annual Performance Report is submitted to the EA and NRW and is available on public record. As shown in figure 23, we remain below the rigorous Best Available Technique (BAT) reference standards, which require lower emission levels for heavy metals and volatile organic compounds.

The emission of greatest concern for local communities is often dust. However, as our Kemsley EfW Environmental Manager revealed, dust levels are so low that they cannot be seen by the naked eye. To ensure accurate readings, enfinium has introduced laser measurement technology to record particles as they move through the beam. However, confidence is no cause for inattention. The wellbeing of our neighbouring communities continues to demand our utmost care and attention.

We are conscious that NOx is the only emission where we are in proximity to our statutory limits and will continue to operate to the highest standards. For example, we are continuously reviewing our use of consumables, such as ammonia (see page 76), to balance emissions output. This is always a fine balance of cost, scope 1 and scope 3 impact.

Figure 23. enfinium facilities average emissions in 2024. Annual average concentration in mg/Nm³ (dry gas, 11% O_2) vs. BREF limits



Engaging Communities

Community engagement

Our local communities care about reliable waste management, climate change, air quality, about their local economy and more generally, about how their community feels to live in.

enfinium regularly engage with non-governmental organisations, charities and civil society groups both directly through our community liaison groups, construction hotline, cross-industry forums and site visits.

Community Liaison Group (CLG) meetings are held at each of our six EfW facilities, for example, involving members of the local council and community groups. The meetings are not open to the public, but minutes of the proceedings are published. Local representatives then engage their constituents.

Community engagement is also a vital component of the UK's waste and energy challenge. We provide opportunities for local communities to learn about recycling and waste management and to further engage with science, technology, engineering and mathematics (STEM) subjects.

Image: Apprentices at Ferrybridge 2

Engagement during construction

At our construction projects: Skelton Grange and Kelvin, we provide a freephone number for local communities; a direct line to raise and resolve issues of concern. Typically, calls help us to address noise, traffic and parking issues near the sites. At Kelvin, where the site is in closer proximity to domestic neighbourhoods, we also provide a regular resident newsletter, offering construction updates and highlighting community funding opportunities and initiatives.

During construction, enfinium make every effort to improve the built environment for residents and businesses, leading to a social and economic halo effect, which boosts the local economy. In doing so, every effort is made to remove challenges, such as through access and traffic load.

AUTUMN **2024**

enfinium

INVESTING IN OUR **LOCAL COMMUNITY**

enfinium Kelvin construction update three

Progress has continued over the summer months as we prepare to enter the final stages of the build.

Being a good neighbour is important to us and our future operations at Kelvin. We are keen to engage with the local community, welcome guests and hire local staff. Our community funding programme for local groups and organisations is also helping embed the facility within Sandwell and the wider region. Once we are up and running, we will be able to divert up to 395,000 tonnes of unrecyclable waste from landfill or export each year. We will use the unrecyclable waste to generate 44MW (gross) of energy, equivalent to the needs of more than 95,000 homes and businesses.

Note from Chris Swanick, Project Manager, enfinium

We're now more than halfway through our third year of construction here at Kelvin. Not only have we made more great progress, but we've also been focusing on being a good neighbour to the surrounding community. We've collaborated on a design initiative with Sandwell art students, and are working hard to address parking issues on Kelvin Way. This third newsletter provides a snapshot of some of the things we've been doing. Please do get in touch with us if you've got any questions or suggestions.

- Installation of turbine **Q1 2024**
- Start cold commissioning **Q1 2025**
- Start hot commissioning **Q2 2025**
- First firing with waste **Q3 2025**
- Takeover **Q4 2025**

Improving Communities

Image: Skelton Grange bridge

Jobs creation

According to a CBI Economics study commissioned by enfinium in 2022, EfW facilities provide high-quality employment, with each job typically 15 times more productive than the regional average. EfW carries a significant multiplier effect, contributing £0.9 million towards the local economy for every job created. Our apprenticeship programme is at the heart of these efforts, alongside c.40 full time roles created at each facility and up to 700 contractors at any one-time during construction.

Skelton Grange Bridge

The Skelton Grange industrial site and bridge was undeveloped for 20 years after the two coal power units closed in the early 1990s. enfinium committed to redevelop the 1950s era bridge, partnering with Volker Laser, an engineering, procurement and construction (EPC) contractor, to provide a gateway to the wider Skelton Grange regeneration project owned by property developer, Harworth Group Plc. The bridge was widened and strengthened, resulting in improved capacity for heavy goods vehicles. The work extended the life of the structure for a further 60 years.

Pennine Way

The River Aire and Pennine Way is an important pedestrian and cycleway for the local community in Leeds. We proposed an amendment to the bridge design, adding a one metre wide set of steps for pedestrians to climb the bridge and the installation of a new cycle duct to allow for greater traffic through flow, alleviating the effort involved with carrying bicycles from the river to the bridge. We also encourage employees to cycle to work at Skelton Grange with cycle parking made available within the site design.

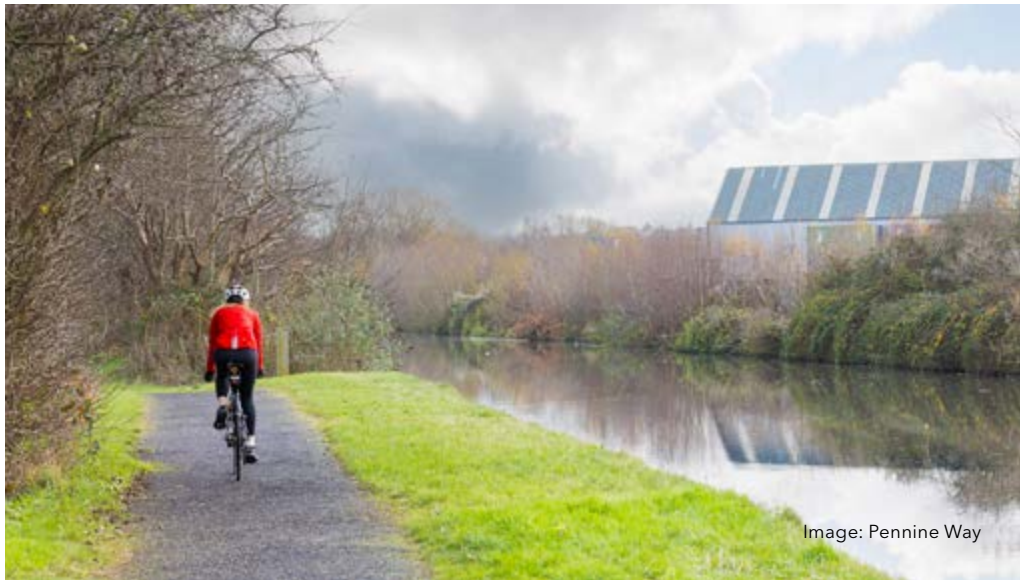


Image: Pennine Way

Image: enfinium volunteers at the Flintshire foodbank

Philanthropic and Community Funding (PCF) Programme

Our PCF programme aligns with our mission, vision or values. supporting registered charities, not-for-profit organisations, schools, places of learning, community and voluntary groups with funding to survive and thrive. We do not support politically affiliated organisations, or those that discriminate based on protected characteristics of the Equality Act 2010.

All applications must demonstrate clear environmental and / or community benefits. For example, the cleaner energy, waste reduction and/or recycling improvements, improved standards of health, safety and wellbeing, or wider community cohesion. This might be achieved by promoting skills and educational development, biodiversity support, or activities that bring previously disparate communities together.

Application criteria and forms can be downloaded from our website here.

£273k
Overall grant funding in 2024*

70+
Projects

2 days
of paid volunteering leave each year
(full-time employees)

Up to £500
match funding for employee fundraising efforts each year

* £273k includes a £50k annual payment to the Parc Adfer Community Fund as per PPP contract with 5 local authorities.

Plant

Ferrybridge 1 and 2

Project Name

Brotherton Playpark

Date

January 2024

Funding

£50,000

Actions

Brand new playpark for Brotherton run by the local parish council

Results

Upgraded playpark provides children 2-12 years of age access to high quality outdoor play equipment.

"We are delighted that enfinium has supported the new playpark in Brotherton that will benefit local families for future generations. Investing in our children is vital to our future. Open spaces like these that grant more access to play have a huge impact on children's mental and physical wellbeing. After a difficult period of lockdowns and reduced access to free spaces, a new playpark will help bring the community together to enjoy the outdoors."

Don Simpson
Parish Councillor for Brotherton

Plant

Kemsley

Project Name

Newton Space Garden

Date

November 2024

Funding

£3,500

Actions

Fund raised beds, additional plants and trees in a unique Newton Space Garden to educate the public about horticulture, astronomy and natural sciences.

Results

Sapling grown from seeds taken to the International Space Station by UK astronaut Sir Tim Peake, with an attractive and pleasing area for young, curious minds to play alongside their families, as well as provide public access to the National Fruit Collection at Brogdale Collections owned by Defra and curated by the University of Reading.

"We are extremely grateful to enfinium for awarding this grant to our school. We can see our lovely meadow coming back to life and this has already had a significant and positive impact upon pupil wellbeing. This funding is enabling us to create a wild, beautiful and inspiring outdoor space for them to enjoy and learn from."

Lisa Ullyart
Learning Assistant at Meadowfield Primary School

Plant
Skelton Grange

Project Name
Wildflower Meadow

Date
June 2024

Funding
£2,000

Actions
Once vibrant wildflower meadow had slowly declined in recent years and was in dire need of a boost. Funding from enfinium helped pupils and teachers breathe life back into their meadow.

Results
The meadow is now once again an exciting new outdoor learning space where pupils can learn about sustainability, science and nature. New benches and outdoor furniture are made from recycled materials.

"We are extremely grateful to enfinium for awarding this grant to our school. We can see our lovely meadow coming back to life and this has already had a significant and positive impact on pupil wellbeing.

Our children are immensely proud of all they have achieved so far in their efforts towards recycling and reducing waste."

Lisa Ullyart
Learning Assistant at Meadowfield Primary School

Plant
Kelvin

Project Name
Glass Fusion Workshops

Date
September 2024

Funding
£2,500

Actions
Stourbridge Glass Museum offers exhibitions and live demonstrations to celebrate the area's unique glassmaking heritage. Our grant enabled the museum to run 11 glass fusion workshops for the local community.

Results
The workshops will be free of charge widening the accessibility of the workshops for underprivileged groups.

"We're grateful for the support that enfinium has given us by providing us with this grant. These workshops will help us deliver engaging, fun and accessible art activities for young people who might not otherwise have had this opportunity.

It's also a chance for us all to celebrate Stourbridge's rich glassmaking heritage so we're pleased that in enfinium, we've found a local business which is keen to help us preserve that local story and tell it to future generations."

Alexander Goodyear
Director of Stourbridge Glass Museum

Plant

Parc Adfer

Project Name

Dangerpoint

Date

November 2024

Funding

£6,000

Actions

The "Sustainable Futures" or "Dyfodol Cynaliadwy" exhibit relaunch aimed at educating children on the importance of and ability to practice sustainability required grant funding.

Results

The exhibit is designed to educate young children on sustainability fundamentals, including introducing them to the concepts of reduce, reuse and recycle and why they matter.

"We are very excited that we could update and improve our Sustainable Futures exhibit thanks to enfinium funding. The new displays provide a fun and engaging educational experience for visitors to learn and build a sustainable future."

Julie Ann Tyler
Dangerpoint

Plant

Ferrybridge 1 and 2

Project Name

Saxton Primary School

Date

November 2024

Funding

£1,800

Actions

We provided grant funding for a new Forest School area that will create walkways and a central reflection area, as well as a wildflower natural habitat.

Results

A dedicated space for Forest School has helped pupil wellbeing and encouraged outdoor learning. We invited Saxton school children to Ferrybridge to see the facility for themselves to build the partnership further.

"I wanted to say another huge thank you to you and your team (Maisie and Simon especially) for such a fun and informative visit to Ferrybridge. The children (and adults too!) thoroughly enjoyed themselves. We can now drive by the plant knowing a little more about what goes on inside! As an eco-school it has also helped to cement the importance of recycling, reusing and reducing our waste."

Kim Heneachon
Saxton Primary School

Charity of the Year

We recognise the importance of and value of contributing to the work of charitable and not-for-profit organisations in proximity to our EfWs. Doing so builds trust and engagement and is core to our ethos of being a valued member of the communities in which our employees live and operate.

Each year, enfinium select a focus charity, benefiting from up to £50,000 of funding, in alignment with our social strategy. We take a bottom-up approach to selection, enabling our employees and Social Working Group to propose organisations that best align to our themes and priorities.

In 2024, we are proud to have selected MIND, for their excellent work across England and Wales supporting those struggling with their mental health, whilst campaigning for better services and rights for some of the most polarised and vulnerable people within our society. MIND provide a range of online resources and offers phone assistance to those that need it most, as well as offering face-to-face mental health services at their local facilities.

We made a collective corporate donation of £34,000 to MIND, £33,000 centrally and a further £1,000 during Mental Health Week.

mind
for better mental health

Repair Cafés

A Repair Café is a community-based not-for-profit, often with charitable status, offering free repairs of common household items such as toasters, hoovers, and bicycles. Every item repaired saves a family from the undue expense of buying a replacement. Research has shown extending a product's lifespan can lead to significant emissions savings. For example, maintaining a single television for an additional seven-years results in a carbon emission saving of 657kg[31].

We launched our Repair Café Support Fund in March 2024, committing £60,000 over a three-year period to help Repair Cafés across the UK fix repairable goods, reduce waste, and save families money. Repair Cafés also play a fundamental role in community cohesion, providing a vital source of joy and cohesion to volunteers and those who utilise their services. This is especially important in the wake of a declining sense of UK community and belonging.

In our first year (2024), we provided grant funding to 15 community-led Repair Cafés located within a 30-mile radius of our EfW facilities, committing a total of £16,079.

"The support from enfinium's Repair Café Support Fund has enabled us to make improvements in our Repair Café that we wouldn't have otherwise been able to afford. This funding has allowed us to offer a better service, providing our community with even more efficient and effective repairs.

It's been a huge boost, enabling us to reach more people, reduce waste, and strengthen our role in supporting a more sustainable and connected local community. We would encourage any repair cafés considering applying to absolutely do so."

Jon O'Conor
Chair of Trustees at the Folkestone Repair Café

"We held six Repair Café sessions since you funded us. During those sessions, 473 items have been brought into Silsden Repair Café, with 329 of those items repaired and reused, 56 taken home to mend in their own time and advice provided on the remaining 48 items. Our efforts were recognised in September when we were awarded a BBC Make a Difference Award. Thank you for your grant. It is making a huge difference!"

Louise Farnell
Silsden Repair Café

31 Öko-Institut e.V., "Economic and environmental impacts of extending the durability of electrical and electronic equipment", 2020, p6.

Thank you for all your support in 2024

2024 has been a hugely positive for year for enfinium, in which crucial steps have been made toward our vision, 'decarbonisation powered by waste'. However, net zero is impossible without the combined efforts of our customers, suppliers, people, communities, partners, investors and policymakers. We thank each and every one of you for your important contributions, as we look forward to another exciting year ahead.

Image: Working group away day 2024

DATA & REPORTING

8

Environmental

Total GHG emissions

Gross emissions: **2,703,182** (including biogenic and non-biogenic emissions)

	2021 tCO_2e	2022 tCO_2e	2023 tCO_2e	2024 tCO_2e
Scope 1	1,035,011	1,014,038	1,101,368	992,589
Scope 2	701	938	593	0
Scope 3	2,127	79,284	111,049	78,663
Total emissions	**1,037,839**	**1,094,260**	**1,213,010**	**1,071,252**

enfinium also calculates the overall emissions benefit generated by its activities including the emissions savings achieved through:

- Generation of electricity for export to the National Grid
- Recovery and recycling of materials from incinerator bottom ash (IBA) and air pollution control residues (APCr), saving emissions that would otherwise be generated by producing virgin materials
- Exporting heat and steam to power industrial facilities and other buildings
- Diverting waste from landfill, which results in emissions savings because emissions from landfill are more harmful than those from energy from waste facilities.

R1 efficiency calculations

	2021	2022	2023	2024
Ferrybridge 1	0.80	0.79	0.89	0.83
Ferrybridge 2	0.85	0.82	0.90	0.86
Kemsley	0.82	0.91	0.93	0.96
Parc Adfer	0.67	0.67	0.71	0.70

For the year 1 January 2021 to 31 December 2024, the emission benefits generated from these activities were as follows:

Total avoided emissions		2021	2022	2023	2024
Electricity generation	Calculation of CO_2 benefit based on displaced marginal CCGT generation (0.38 kg CO_2e/kWh)	546,354 tCO_2e	687,906 tCO_2e	687,906 tCO_2e	635,954 tCO_2e
By-product recovery	Calculation of CO_2 benefit based on revised emissions factors provided by Arup Consulting	256,567 tCO_2e	91,639 tCO_2e	98,117 tCO_2e	114,377 tCO_2e
Heat/Steam export	UK government GHG Conversion Factors for Company Reporting, assuming displacement of gas-fired boilers	40,068 tCO_2e	66,394 tCO_2e	68,830 tCO_2e	80,849 tCO_2e
Landfill diversion	External consultant calculated emissions factor based on comparison between landfill and waste-to-energy emissions (0.375 t CO_2e/t waste)	766,598 tCO_2e	746,703 tCO_2e	783,985 tCO_2e	799,025 tCO_2e

The total Avoided Emissions from the above activities for the year was:

1,631,068
tCO_2e

The Net Carbon Benefit of enfinium's operations after deducting scope 1, 2 and 3 emissions is:

559,816
tCO_2e

Emissions performance compared to ELV and BREF limits	Dust mg/m²	TOC mg/m²	HCl mg/m²	SO_2 mg/m²	CO mg/m²	NOx mg/m²
Emission Limit Values	10.00	10.00	10.00	50.00	50.00	200.00
BREF Limits	10.00	10.00	10.00	40.00	50.00	180.00
Ferrybridge 1 Average	0.75	0.26	4.12	4.26	10.45	156.91
Ferrybridge 2 Average	0.54	0.07	6.88	0.30	2.74	167.38
Kemsley Average	0.10	0.21	4.11	5.27	2.77	169.15
Parc Adfer Average	0.29	0.07	5.01	8.18	6.08	170.77

Water resource usage	Mains/town water m³	Recycled process water m³	Borehole water m³	Total m³
Ferrybridge 1	92,370	-	59,242	**151,612**
Ferrybridge 2	49,068	-	87,235	**136,303**
Kemsley	8,649	25,998	-	**34,647**
Parc Adfer	19,116	10,762	-	**29,878**
TOTAL	**169,203**	**36,760**	**146,477**	**352,440**

Image: Kemsley EfW wind monitoring

Safety

Historic safety performance data	2021	2022	2023	2024
Total number of hours worked (annual figure) (employees)	436,398	529,355	593,356	641,614
Total number of hours worked (annual figure) (contractors)	236,579	561,955	1,331,439	2,823,974
Number of fatalities (employees and contractors)	0	0	1[32]	0
Number of lost time injuries (employees)	4	0	1	0
Number of lost time injuries (contractors)	5	2	5	7[33]
Lost time injury rate (per 100,000 hours – employees and contractors)	1.3	0.4	0.31	0.2

32 An incident in December 2023 resulted in a third-party fatality in 2024. HSE guidelines consider the fatality to have occurred in 2023.
33 7 RIDDOR incidents were reported in 2024.

Employees

	2021	2022	2023	2024
Number of staff (total)	238	256	279	330
Number of staff (female)	33	37	44	54
Number of staff in management (total)	7	8	7	7
Number of staff in management (female)	1	1	2	2
Number of Board directors (total)	6	7	8	7
Number of Board directors (female)	1	2	2	2
Number of onsite contractors (total)	9	7	18	25
Number of onsite contractors (female)	2	2	2	5
Number of new hires (total)	51	68	52	91
Number of new hires (female)	9	20	10	21
Number of new appointments to Board and management (total)	2	1	1	0
Number of new appointments to Board or management (female)	0	1	0	0
Unadjusted gender pay gap	-21%	4%	-10%	-7%

Image: International Women's Day event

TCFD Index

The Task Force on Climate-related Financial Disclosures (TCFD) provides a framework for consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders. The table below links to where relevant information can be found on our website, annual report, SECR, Sustainability report, and Net Zero Transition Plan.

This represents our third disclosure in line with the TCFD recommendations. We are disclosing voluntarily, report progress annually, and will continue to develop our approach to the management of climate-related issues.

TCFD Pillar	TCFD Recommended Disclosure	Summary	Location of Disclosure
Governance	a) Describe the Board's oversight of climate-related risks and opportunities	The enfinium Group Board has overall responsibility for defining our strategy and overseeing the performance of our business. The Board approves our Sustainability Strategy and Net Zero Transition Plan. The Board has established an Sustainability assurance section within the Finance, Risk Management and Audit Committee, outside of the existing Health and Safety Committee to challenge climate change and sustainability impacts to the business.	Sustainability Report 2024, Enabling Excellence, Realising Potential, page 47. Net Zero Transition Plan.
	b) Describe management's role in accessing and managing climate-related risks and opportunities	The Executive Committee is responsible for safety, environmental, operational, financial and human resources performance, and monitoring strategic objectives. The Head of Sustainability oversees implementation of our Sustainability Strategy and Net Zero Transition Plan, ensuring these are considered in strategic decision-making.	Sustainability Report 2024, Enabling Excellence, Realising Potential, page 47. Net Zero Transition Plan.
Strategy	a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long-term	HSSE principal risks and uncertainties are disclosed in our Annual Report. Operational and construction, corporate and financial principal risks are disclosed in our Sustainability Report. Our Sustainability Report outlines opportunities we are pursuing across our strategy. Our Net Zero Transition Plan outlines in further detail the strategic decarbonisation opportunities that we are pursuing.	Annual Report, Principal Risks & Uncertainties, pages 4-5. Sustainability Report 2024, Trusted today, Pioneering tomorrow, page 27. Net Zero Transition Plan.
	b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning	Our Sustainability Strategy outlines our governance, environmental, people and community priorities and ambitions. Our Net Zero Transition Plan outlines our plans to decarbonise our business.	Sustainability Report 2024, Trusted today, Pioneering tomorrow, page 27. Net Zero Transition Plan.
	c) Describe the resilience of the organisation's strategy taking into consideration different climate-related scenarios, including 2°C or lower scenario	Our Net Zero Transition Plan utilises scenarios to account for risks and uncertainties in our path toward net zero. We undertook scenario analysis to assess the resilience of our business operations and strategy in 2024.	Sustainability Report 2024, Trusted today, Pioneering tomorrow, page 27. Net Zero Transition Plan.

TCFD Pillar	TCFD Recommended Disclosure	Summary	Location of Disclosure
Risk Management	a) Describe the organisation's processes for identifying and accessing climate-related risks	Enfinium's Risk Management Policy defines our overall process for risk identification and assessment, key risk controls and mitigation measures. We undertook scenario analysis to assess the resilience of our business operations and strategy in 2024.	Sustainability Report 2024, Trusted today, Pioneering tomorrow, page 27. Net Zero Transition Plan
	b) Describe the organisation's processes for managing climate-related risks	Enfinium's Risk Management Policy defines our overall process for risk identification and assessment, key risk controls and mitigation measures.	Sustainability Report 2024, Trusted today, Pioneering tomorrow, page 27.
	c) Describe how processes for identifying, accessing, and managing climate-related risks are integrated into the organisation's overall risk management	Enfinium's Risk Management Policy defines our overall process for risk identification and assessment, key risk controls and mitigation measures.	Sustainability Report 2024, Trusted today, Pioneering tomorrow, page 27.
Metrics and Targets	a) Disclose the metrics used by the organisation to assess the climate-related risks and opportunities in line with its strategy and risk management process	Our Sustainability Strategy outlines our governance, environmental, people and community priorities and ambitions. We disclose Scope 1, 2 and 3 greenhouse gas (GHG) emissions and total avoided emissions annually in our Sustainability Report.	Sustainability Report 2024, Data & Reporting, page 101.
	b) Disclose Scope 1, Scope 2, and if appropriate Scope 3 greenhouse gas emissions, and the related risks	We disclose Scope 1, 2 and 3 greenhouse gas emissions and total avoided emissions annually in our Sustainability Report. We are working to expand our Scope 3 emissions measurement and reporting.	Sustainability Report 2024, Data & Reporting, page 101.
	c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets	Our target is our Net Zero Transition Plan, currently encompassing our Scope 1 and 2 emissions profile. Future iterations of our Net Zero Transition Plan will include Scope 3 alongside our identified actions to decarbonise these value chain emissions.	Sustainability Report 2024, Data & Reporting, page 101. Net Zero Transition Plan

Glossary

APCr	Air Pollution Control residues
BEIS	Department of Business, Energy and Industrial Strategy
BNG	Biodiversity net gain
BREF	Best Available Techniques Reference Documents
CCSA	Carbon Capture and Storage Association
CCUS	Carbon capture, utilisation and storage
CDR	Carbon Dioxide Removal
CEMS	Continuous Emissions Monitoring Systems
CfD	Contracts for difference
CHP	Combined heat and power
CLC	Community liaison committee
COD	Commercial operation date
DEFRA	Department for Environment, Food & Rural Affairs
DE&I	Diversity, equality and inclusion
EEMUA	Engineering Equipment and Materials Users Association
EfW	Energy from Waste
EGL	Electricity Generator Levy
EMS	Environmental management systems
EPC	Engineering, procurement & construction

ESA	Environmental Services Association
EV	Electric vehicle
FSC	Forest Stewardship Council
GHG	Greenhouse gas
GGR	Greenhouse Gas Removal
H&S	Health and safety
IBA	Incinerator bottom ash
ICE	Internal combustion engine
Igneo IP	Igneo Infrastructure Partners
IPCC	The Intergovernmental Panel on Climate Change
LTIFR	Lost time injury frequency rate
LCCC	Low Carbon Contracts Company
NWRWTP	North Wales Residual Waste Treatment Project
MSW	Municipal solid waste
REA	The Association for Renewable Energy and Clean Technology
REMA	Review of Electricity Market Arrangements
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013
UK ETS	UK Emission Trading Scheme
UN SDG	United Nations Sustainable Development Goals

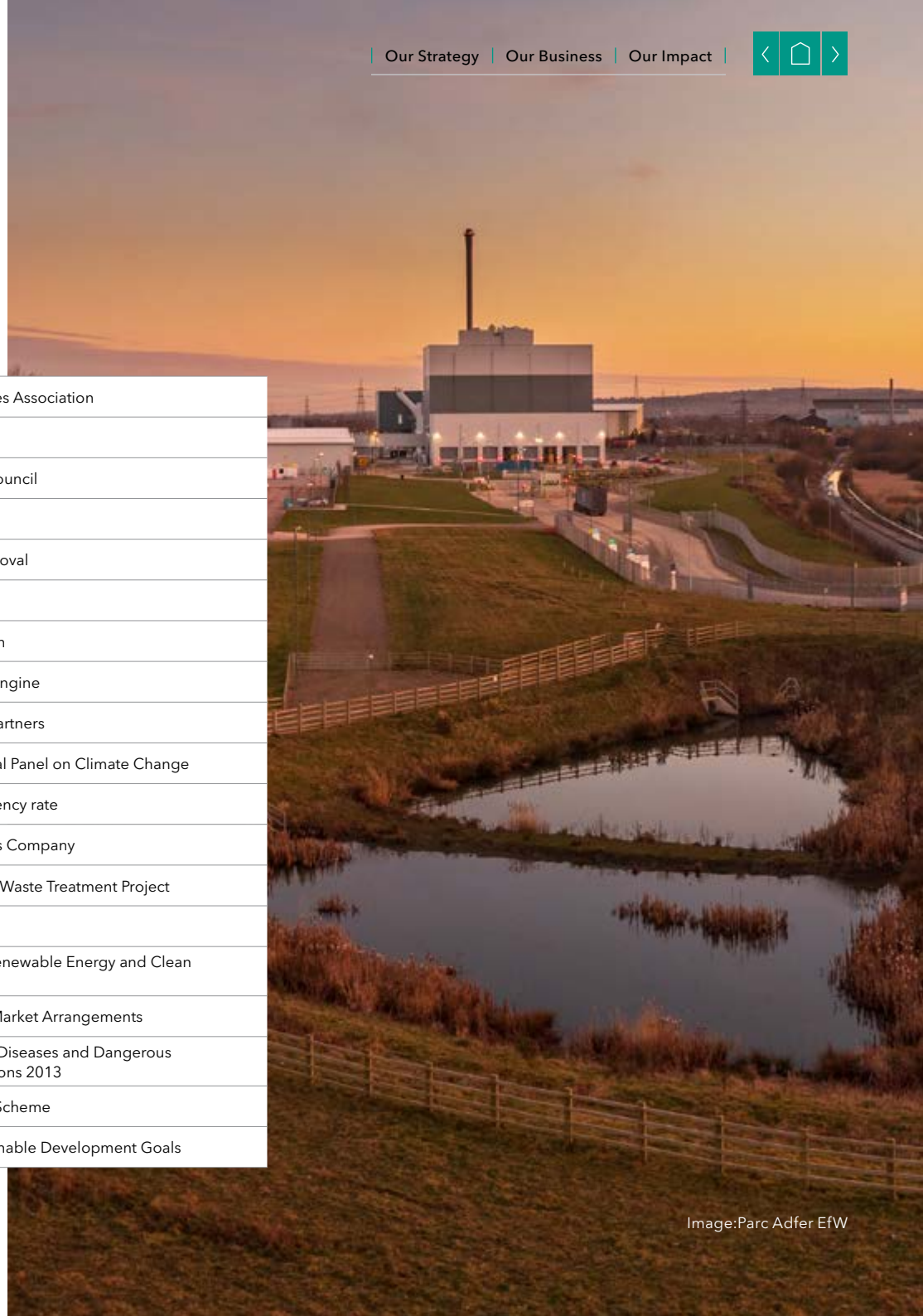


Image:Parc Adfer EfW

This document and its contents have been prepared on behalf of enfinium Group Limited. This Sustainability Report relates to the activities, brands, products and services associated with enfinium Group Limited. Reference to the 'Company' or to 'enfinium' means, as the context may require, enfinium Group Limited and all or some of its subsidiaries or operating companies. enfinium Group Limited assumes no responsibility to any other party in respect of, or arising out of, or in connection with, this document and/or its content or reliance thereon.

This report ('report') covers activities of the enfinium Group Limited from January 1, 2024 to December 31, 2024.

Total emitted and avoided emissions in 2024 have been verified by Trident Utilities, a specialist compliance consultancy.

This report has been produced by enfinium in conjunction with Six Agency.

AWARDS

IJ Global ESG Awards 2024
Winner

Bionet Biodiversity Award 2024
Winner

Edie Net Zero Awards 2024
Finalist

UK Business Green Awards 2024
Finalist