



# Delivering green growth and supporting communities

The economic, social and environmental contribution of enfinium in the UK

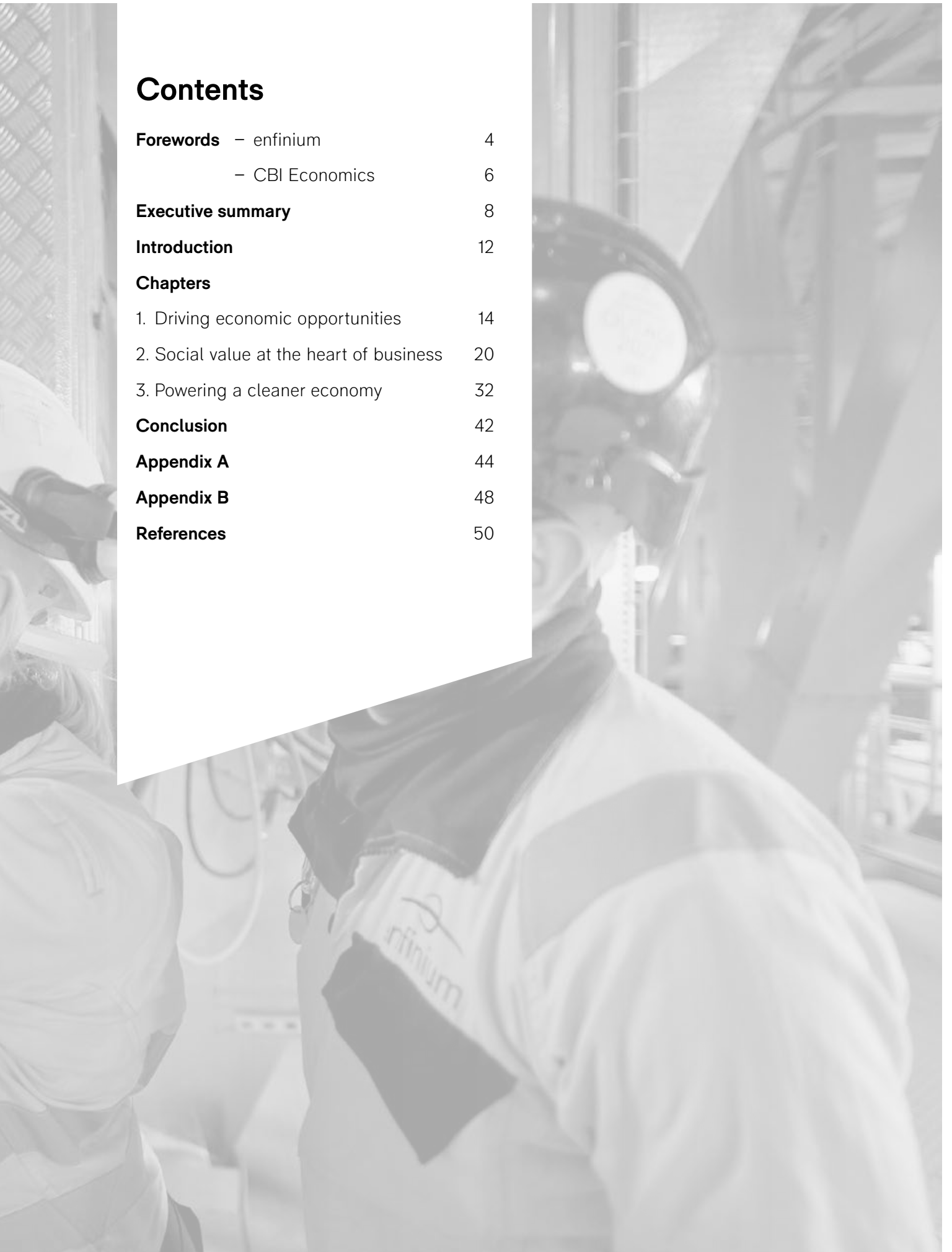
Commissioned by





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# Foreword enfinium

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The transition to a Net Zero emissions economy by 2050 represents one of the greatest economic opportunities in the history of the UK. Recent publications such as the Skidmore Net Zero Review and the Climate Change Committee's Sixth Carbon Budget analysis illustrate that the green industries of the future will create jobs and wealth across the UK.

Modern energy from waste (EfW) infrastructure can play a critical role in enabling this green transition. Last year, the UK's fleet of EfW plants transformed over 15 million tonnes of non-recyclable waste into 3% of the UK's electricity.<sup>1</sup> This CBI Economics report explains the significant contributions that enfinium, as one of the largest EfW operators in the UK, makes for the benefit of regional economies. Our four operational and two under construction plants provide UK regional economies with safe waste disposal, high quality local jobs as well as homegrown energy that underpin the country's energy security.

enfinium is a net producer of energy, avoiding more emissions than it emits. Today, enfinium has an annual waste processing capacity of over 2.3 million tonnes, and a total combined electric generating capacity of 265MW (gross) – enough to power more than 500,000 UK homes. By the end of 2025, enfinium expects to process over 3.1 million tonnes of residual waste and generate 358MW (gross) of electricity – equivalent to the power needs of a city the size of Birmingham.

As a package, the CBI Economics analysis shows that enfinium's activities in 2022 contributed £242 million in gross value added and supported 1,047 full time jobs across the UK when the benefits from our wider supply chain and employee spending are included. For every enfinium job, the company's spending supports three additional jobs across the wider UK economy for every enfinium employee. This demonstrates just how important enfinium's energy from waste plants are to the levelling up agenda for local, regional, and national governments alike, forming part of the country's critical national infrastructure.

I am incredibly proud to work for an organisation that provides such a significant benefit to local communities up and down the country. The role enfinium plays in society through our apprenticeship programme, employee wellbeing package and community funding initiatives, that contributed £148,000 to local causes in 2022, highlights our commitment to the places we call home.



**Mike Maudsley**  
Chief Executive Officer



# Foreword CBI Economics

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The UK's transition to net zero greenhouse gas emissions will be the defining change over the next decade. As well as protecting the planet we all share, the net zero transition presents opportunities for businesses across the country to innovate and grow.

Momentum is building in the race to net zero across nations, businesses, and public bodies. The UK has taken early action in setting ambitious targets but must move quickly from ideas into implementation and delivery to keep up this momentum.

The energy crisis has also brought to the fore the importance of improving the UK's energy independence to protect those most vulnerable in society. This is why diversifying energy sources to improve the UK's resilience to future energy crises will be beneficial for all in society, as well as for our planet.

By investing in home grown energy solutions, the UK can drive green growth, lower energy prices, and provide skilled employment opportunities for all. The energy resilience of the UK economy is now mission critical, and companies like enfinium have an essential role to play in achieving the country's net zero targets.

This report sets out enfinium's contributions to decarbonising the UK economy and to the UK's energy security. It also showcases the company's impact up and down the country through its work to develop the skills of the future and to provide economic opportunities to local communities.

We hope this report provides an insight into just how much businesses can contribute not just to providing much-needed solutions but also to creating opportunities for all from green growth.



**Mohammad Jamei**  
Director of CBI Economics





# Executive Summary

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*CBI Economics were commissioned by enfinium to assess their UK and regional economic, social and environmental contributions, to understand the role the company plays in creating economic opportunities across the UK and in improving energy security.*

## **The UK has an opportunity to improve its energy security, promote green growth and improve prosperity for all in the years ahead**

The UK has been hit by a perfect storm of supply challenges since the start of the pandemic, as labour shortages, global supply chain disruptions, and an energy crisis have fueled inflation and squeezed incomes. This has wiped out real growth in earnings since 2014 and is set to push the UK into a recession in 2023. As the economy recovers, there is an opportunity for the UK to set a clear strategy to drive green growth and secure its energy independence, as well as equip its workforce with the skills of the future and improve economic opportunities for those most vulnerable in society.

As a leading waste management and energy supplier, enfinium is a key player in building the UK's energy independence and supporting green growth. Through its advanced Energy from Waste (EfW) facilities, both existing and new, located throughout the UK, enfinium can enhance the UK's capacity for one of the most reliable home grown sources of energy, as well as create high-value economic opportunities in areas of the country that lag behind in productivity and employment. **Figure 1** below summarises these key contributions.



**Figure 1** Overview of enfinium's economic, social and environmental contributions



**1,047 jobs** and **£242 million in economic value** are supported by enfinium and its suppliers across more than half of the UK's local authorities;

That is **three jobs in the wider economy** for every enfinium job;

**Each enfinium job is 15 times more productive than the regional average and generates £0.9 million in economic value**



**61%** of the economic value created by enfinium and nearly **a third of employment** are found in Yorkshire & the Humber;

enfinium's employees are typically local to the sites, with 85% of Ferrybridge employees residing within a 20-mile radius, in local areas with average wages below £30,000 per year and unemployment rates over 5% (v. UK 4.4%)



**2.3 million** tonnes of non-recyclable waste is currently processed by enfinium in a year;

This is used to generate **265 MWh** of baseload energy;

By 2025, their capacity will grow to **3.1 million tonnes of waste** and **358 MWh of energy**, enough to power 750,000 homes

## **enfinium creates high-value economic opportunities up and down the country, supporting employment in more than half of the UK's local authorities**

In 2022, enfinium contributed £198 million in Gross Value Added (GVA) to the UK economy through its activities. This represents a quarter of the UK remediation and waste management sector. enfinium also contributed 273 jobs to UK employment in the same year, with nearly half located in Yorkshire and the Humber. These are highly productive jobs, generating £0.9 million of GVA each, which is 15 times more productive than the average Yorkshire and the Humber employee.

The company also creates value through its expenditure with suppliers and its employees' expenditure on goods and services. enfinium's supply chain expenditure reaches over 600 businesses across the UK, with the largest contributions in the Yorkshire and the Humber region, the East Midlands, the North West and the South East.

This supply chain expenditure and the spending of employees generated £44 million in economic value and supported 774 jobs in 2022 – for every enfinium job, four jobs (including enfinium's headcount) are supported throughout the UK economy. When including these wider impacts, enfinium's contribution rises to £242 million and 1,047 jobs, creating value right across the UK.

## **The company is investing in its employees' wellbeing and progression, while also working to support local communities**

enfinium supports its employees and communities through a range of initiatives, including comprehensive wellbeing policies, apprenticeships, and community support. By providing skilled jobs at wages above the regional average, enfinium is supporting quality employment opportunities which translate into benefits for the local communities. Equally, it is offering a potential career path in communities where there are limited career options.

enfinium invests in its people, currently spending over £300,000 a year on regular training for its employees, with further developmental training opportunities for all staff. For those starting their career, enfinium offers both a Level 3 Engineering apprenticeship and a Level 3 engineering technician training programme. The company has recently launched a Diversity Network, to support its female employees and promote the cause of women in Science, Technology, Engineering, and Mathematics (STEM). It also provides a comprehensive wellbeing package, including full health insurance, using staff feedback to help inform the benefits and policies it offers.

In addition, enfinium is strongly involved in the communities in which it operates, with dedicated Community Funds which have contributed over £148,000 to local causes in 2022. A large proportion of the donations from Ferrybridge are made in Wakefield, one of the most deprived local authorities with one of the lowest levels of GCSE attainment.

### **As a key part of the UK energy ecosystem, enfinium plays a key role in the transition to net zero and green growth**

enfinium takes a proactive approach to supporting the UK's transition to net zero, with their facilities providing an energy source and reducing the amount of waste sent to landfill. The company processes 2.3 million tonnes of waste annually, equivalent to the waste produced by the East of England population. With two new facilities being built, its waste processing capacity will increase to 3.1 million tonnes of waste. By the end of 2025, this will generate 358 megawatts (MW) of electricity, enough to power Birmingham.

Furthermore, enfinium is a net producer of energy, avoiding more emissions than it emits. The company delivered savings of over 565,000 tonnes of CO<sub>2</sub> emissions to the UK economy in 2021 – the equivalent of 113,000 individuals' emissions. enfinium's facilities are saving over 250kg CO<sub>2</sub> per tonne of waste, 25% above the average UK EfW facility.

In addition to investing in new EfW facilities, enfinium are also looking to establish their role within the circular economy and capture more by-products from their processes. This builds on their existing work in capturing Incinerator Bottom Ash (IBA), recycling APCr (Air Pollution Control residue) metals, and capturing steam and heat to convert it into energy.

As a result, enfinium plays a clear role in powering the UK economy with energy through decarbonisation efforts and investments. This helps to reduce waste, support the circular economy, and increase the UK's energy security in the years ahead.

# Introduction

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The UK has lagged behind the major G7 economies on productivity for many years. As the CBI have argued in its plan *How Britain Grows Again*, the current headwinds from inflation, the energy crisis, and labour shortages pose a risk for the UK economy of returning to a path of anemic growth in the decade ahead.

Moreover, as the UK heads into a recession in 2023, with GDP set to decline by 0.6%,<sup>2</sup> there is a risk that income inequalities widen, as cost-of-living pressures (including energy and mortgage payments) and real falls in incomes are disproportionately felt by those at the lower end of the income distribution. Businesses have a key role to play in supporting both employees and communities through these challenges and ensuring fair and equitable opportunities are available to all.

At the same time, as energy security continues to impact both businesses and households, there is an opportunity for the UK to develop home grown solutions which not only builds its energy independence, but also helps to accelerate the transition to net zero greenhouse gas emissions.

Currently, the UK is falling behind its G7 peers in its commitment to net zero, with government spending committed to climate change – as a share of GDP (at 1.2%) – significantly below Germany (5.2%), France (2.5%) or the US (1.9%).<sup>3</sup> This can be regarded by businesses as a signal of poor commitment and act to deter investment, leading to lost opportunities for green growth. Estimates show that the UK's share of the European markets in green technology production such as offshore wind, EV batteries or hydrogen electrolyzers fell between 2020 and 2022, with an estimated £4.3 billion in economic value lost by 2030. This shows that the UK must boost its competitiveness and incentivise domestic investment if it is to realise its net zero ambitions.

As the Skidmore review concluded, investing in the domestic circular economy will help to create more resilient energy supply chains and lessen reliance on more volatile networks (such as wind or solar power).<sup>4</sup> Energy derived from waste presents a key opportunity for the UK to diversify its energy sources, developing home grown energy solutions and supporting the UK circular economy at the same time.

As a leading energy supplier, enfinium plays an important role in building the UK's energy independence and supporting green, investment-led growth. Through its state-of-the-art Energy from Waste (EfW) facilities located right across the UK, as well as its planned investment in two new facilities, enfinium are well positioned to contribute not just to supporting the UK's capacity for one of the most reliable sources of energy, but also for creating high-value economic opportunities in areas of the country which are lagging behind on productivity and employment.

Within this context, CBI Economics have sought to demonstrate:

- The economic contribution of enfinium across the UK and regional economies, highlighting the opportunities it provides at local levels and amongst communities who most need them.
- The social value created by enfinium through its commitment to supporting both its employees and the local communities surrounding its sites, creating fair and equitable opportunities, and its investment in high-value skills.
- The contributions of enfinium towards providing reliable energy to homes and businesses across the UK, as well as its role in supporting the circular economy.
- The opportunities the company presents for growing the UK's energy sector and contributing towards energy security in the years ahead.

This report is structured into three chapters, presenting findings around the economic opportunities supported by enfinium, the social value it creates, and the role the company plays in powering the UK economy.



# Driving economic opportunities

## Productivity-led value generation

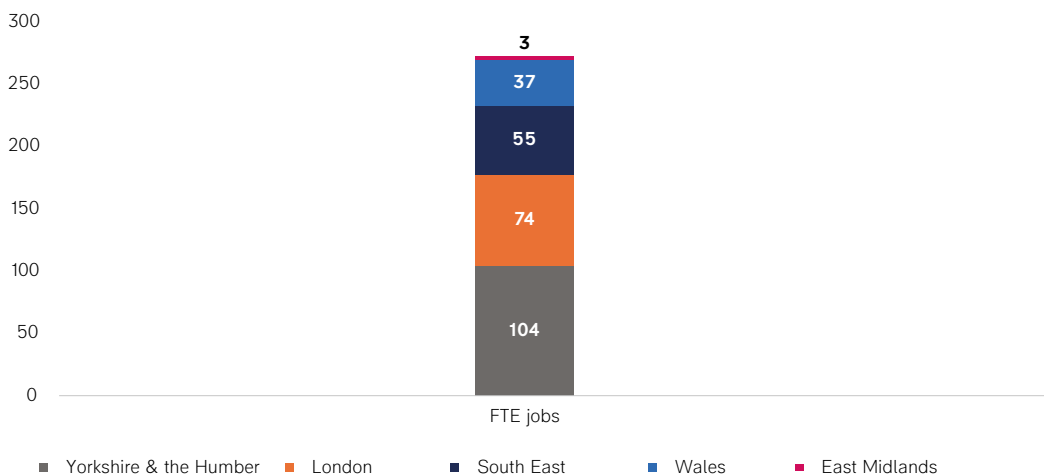
Green growth has the potential to be a major propellor for future competitiveness and unlock growth for the UK. This will build on existing high-value activity and innovation within the energy sector and its supply chain.

enfinium directly contributed £198 million in Gross Value Added (GVA)<sup>1</sup> to the UK economy in 2022 through its activities across its two Ferrybridge sites, as well as the Kemsley, Parc Adfer and London sites. This activity represents a quarter of the UK remediation and waste management sector, despite a market share of just under 14% relative to all energy-from-waste (EfW) companies in the sector.

enfinium also contributed a total of 273 Full Time Equivalent (FTE) jobs to UK employment through its activity in the same year, nearly half of which were in Yorkshire and the Humber, where the two Ferrybridge facilities are located. These are highly productive jobs, generating £0.9 million of GVA each (which is over four times more productive than the energy industry average and 15 times more productive than the average Yorkshire and the Humber employee).

Given the high value generated by the employees in the two Yorkshire and the Humber Ferrybridge sites, nearly two thirds (61%) of the company's GVA is found in Yorkshire and the Humber.

**Figure 2** Overview of enfinium's employment by region, 2022



**Source:** enfinium, 2022

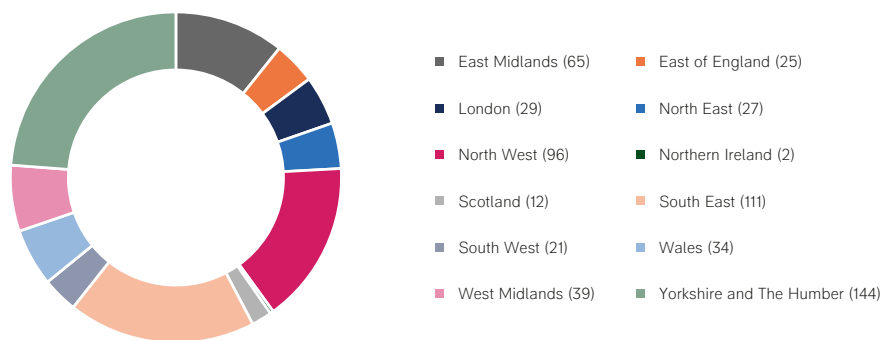
<sup>1</sup> GVA (Gross Value Added) represents the income generated by enfinium which can be re-spent or re-invested throughout the economy, creating additional value. GVA is the sum of gross operating profits, wages and salaries, self-employment income and taxes (less subsidies) on production.

### Supporting the wider economy

In addition to the employment enfinium supports directly through their activity across its sites, the company creates additional value throughout the wider UK and regional economies through their expenditure with its suppliers. enfinium’s employees, as well as the employees in the company’s supply chain, create further value through their own expenditure on goods and services throughout the economy – expenditure which would not be possible without the employment opportunities supported by enfinium and the earnings they pay.

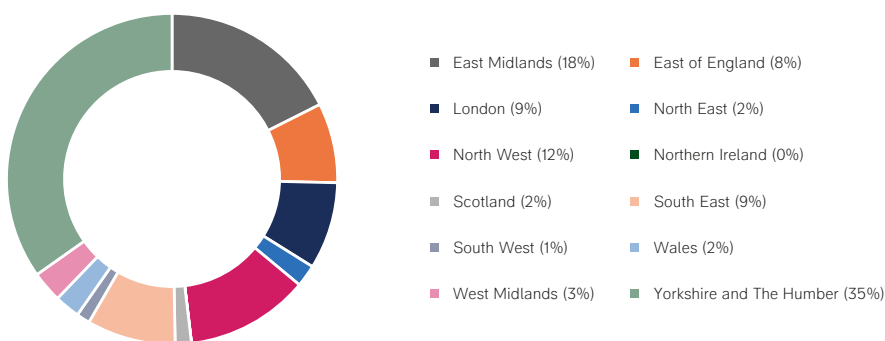
enfinium’s supply chain is predominantly based in the UK, with 85% of its expenditure helping to create value across the country and reaching more than 600 UK businesses, large and small. While their expenditure reaches businesses across nearly all UK regions, the largest supply chain expenditure is with businesses in the Yorkshire and the Humber region, the East Midlands, the North West and the South East. **Figures 3** and **4** below provide an overview of this reach across the UK’s regions.

**Figure 3** Number of enfinium’s suppliers by region, 2021-22



Source: enfinium, 2022

**Figure 4** Percentage of total procurement spend by region, 2021-22

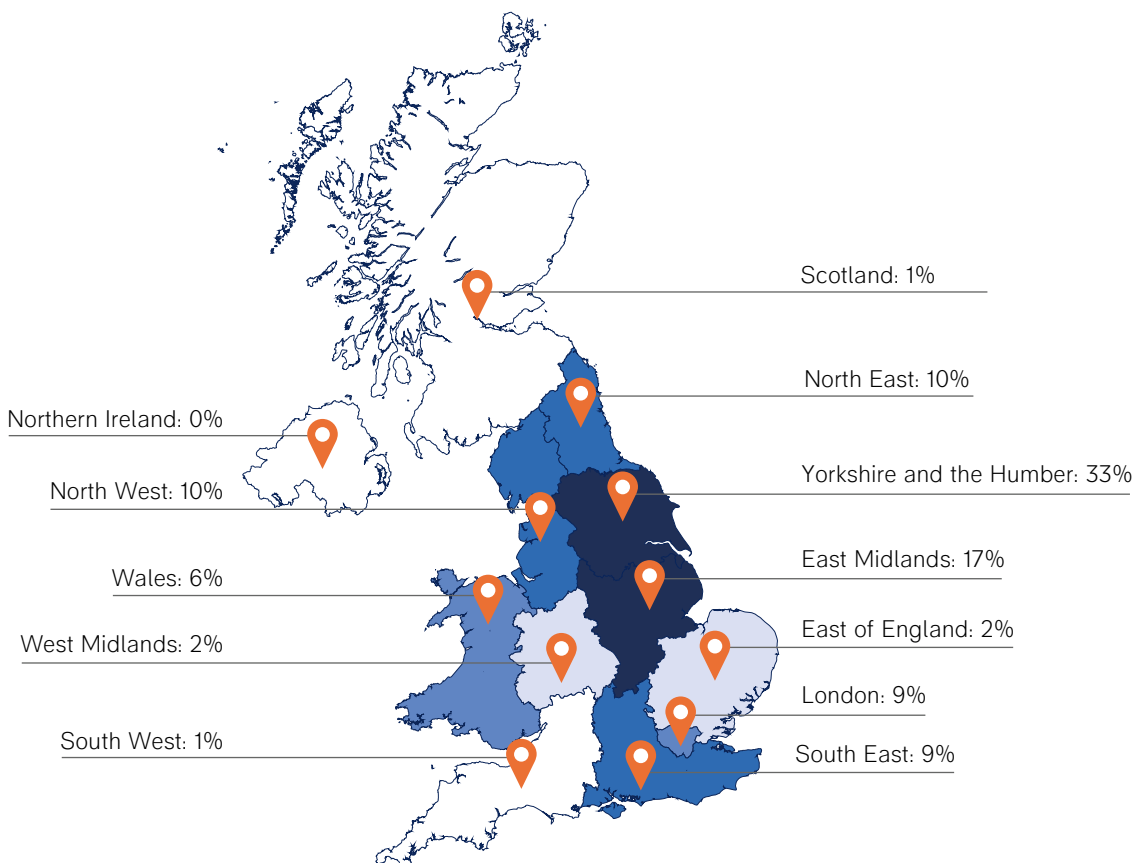


Source: enfinium, 2022

This supply chain expenditure and the spending of employees' earnings generated £44 million in economic value and supported 774 jobs in 2022, in addition to those supported by enfinium's direct activity. This implies that, for every enfinium employee, a further three employees are supported throughout the wider UK economy (a total of four including enfinium's headcount). Once these wider contributions are taken into account, enfinium's contribution rises to a total of £242 million in GVA and 1,047 jobs.

In line with the footprint of its suppliers, enfinium's total employment contribution is also generally distributed across the UK, with 33% of this found in Yorkshire and the Humber, 17% in the East Midlands, and 9% in the South East. The North features heavily with 10% of enfinium's total employment found in the North East and a further 10% in the North West. **Figure 5** below shows the regional distribution of the total employment supported by the company.

**Figure 5** Total FTE employment contribution by region, 2022



**Source:** CBI Economics analysis

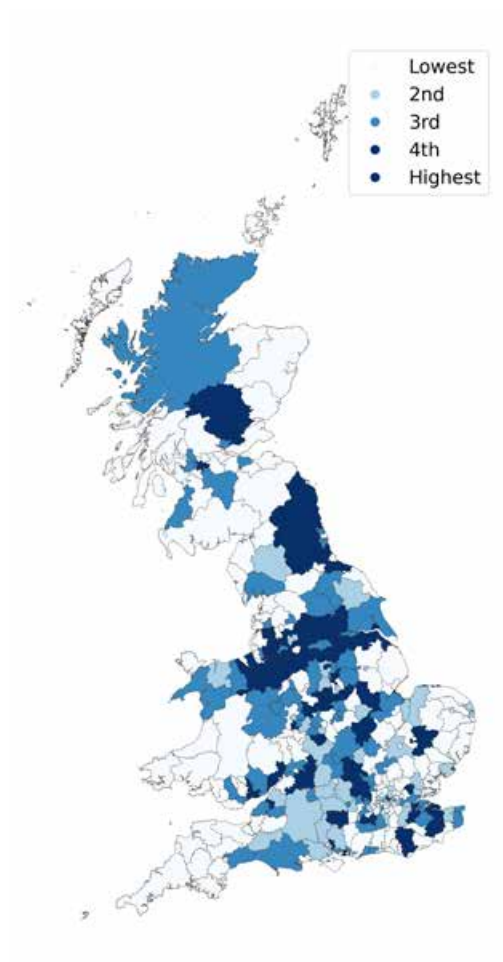
Additional value is created by enfinium's London staff, where approximately 40% regularly travel across the company's sites. This creates additional value through the travel expenditure and supports nearly £0.2 million of spend with businesses in the areas surrounding the sites they travel to.



## Creating value where it matters

As previously discussed, enfinium has a presence across the UK, beyond its site activity in Wakefield (Ferrybridge), Flintshire (Parc Adfer), Swale (Kemsley), Sandwell (Kelvin), Leeds (Skelton Grange) and Westminster (London head office) through its supply chain contributions. enfinium's expenditure reaches more than half (55%) of all the local areas (Local Authority Districts) in the UK, demonstrating the extensive supply chain.

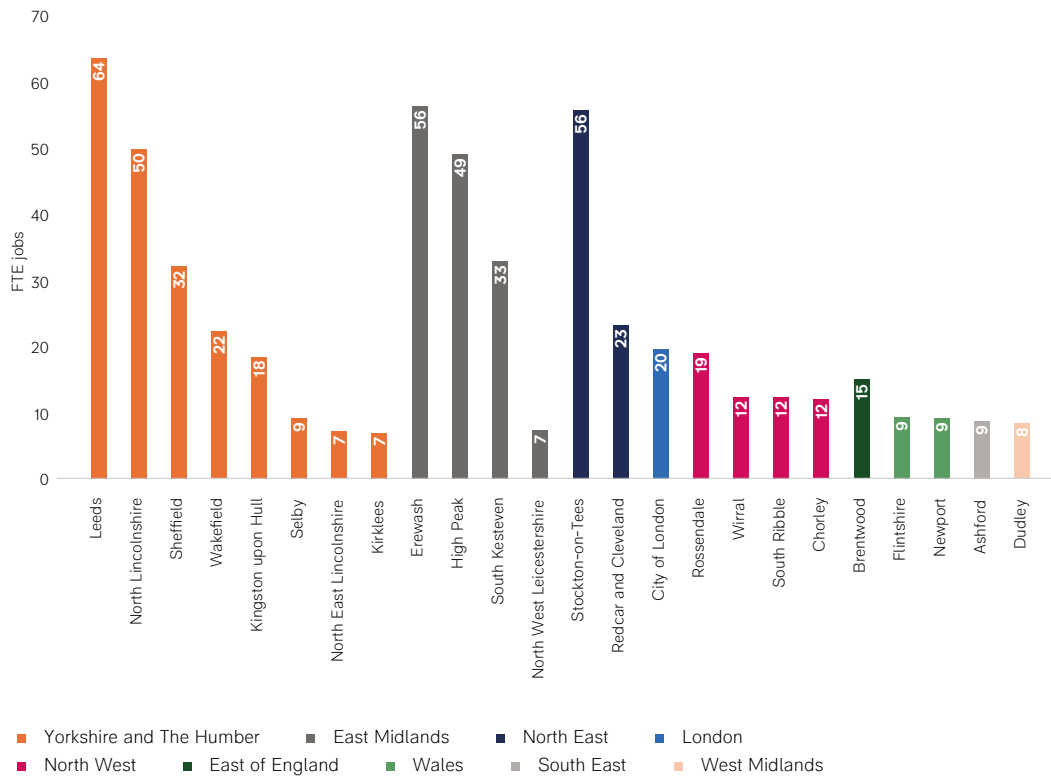
**Figure 6** Total employment contribution by local authority district, split by quintile



**Source:** CBI Economics analysis

The company's largest wider contributions (supply chain and employee spend) are summarised in **Figure 7** below. These areas collectively make up over two thirds (72%) of enfinium's wider employment contributions and more than half (55%) of their total contributions (including jobs directly with enfinium). A total of 558 jobs are supported by enfinium's expenditure in these areas alone, generating £32 million in GVA.

**Figure 7** Wider employment contributions, top 3% of local authorities where enfinium contributes



**Source:** CBI Economics analysis

enfinium's employment is spread across areas with differing levels of economic deprivation and educational attainment.

As highlighted in the figure above, enfinium provides wider employment opportunities to areas which have higher deprivation, such as Redcar and Cleveland, Kingston upon Hull, the Wirral and North East Lincolnshire. These areas are within the top 15% of the most deprived local areas in England, with Kingston upon Hull experiencing the 6th largest income deprivation rate, with 23% of its population considered to be 'income deprived' However, it also contributes to wider employment in areas such as the City of London and Brentwood which are ranked 280 and 281 in income deprivation out of 316 local authorities.<sup>5</sup>

As with income deprivation, enfinium contributes to wider employment across areas of differing educational attainment rates. In Wakefield and North East Lincolnshire, two of the areas where most of enfinium's contributions can be found, nearly 20% of the economically active population is qualified below GCSE level – almost twice the UK average.

On the other hand, other northern areas such as Kingston upon Hull, Leeds, Sheffield or North West Leicestershire, as well as southern areas like Erewash, Brentwood which fall amongst the areas with the largest enfinium wider contributions, have an above average share of individuals qualified to a GCSE level or above.



# Social value at the heart of business

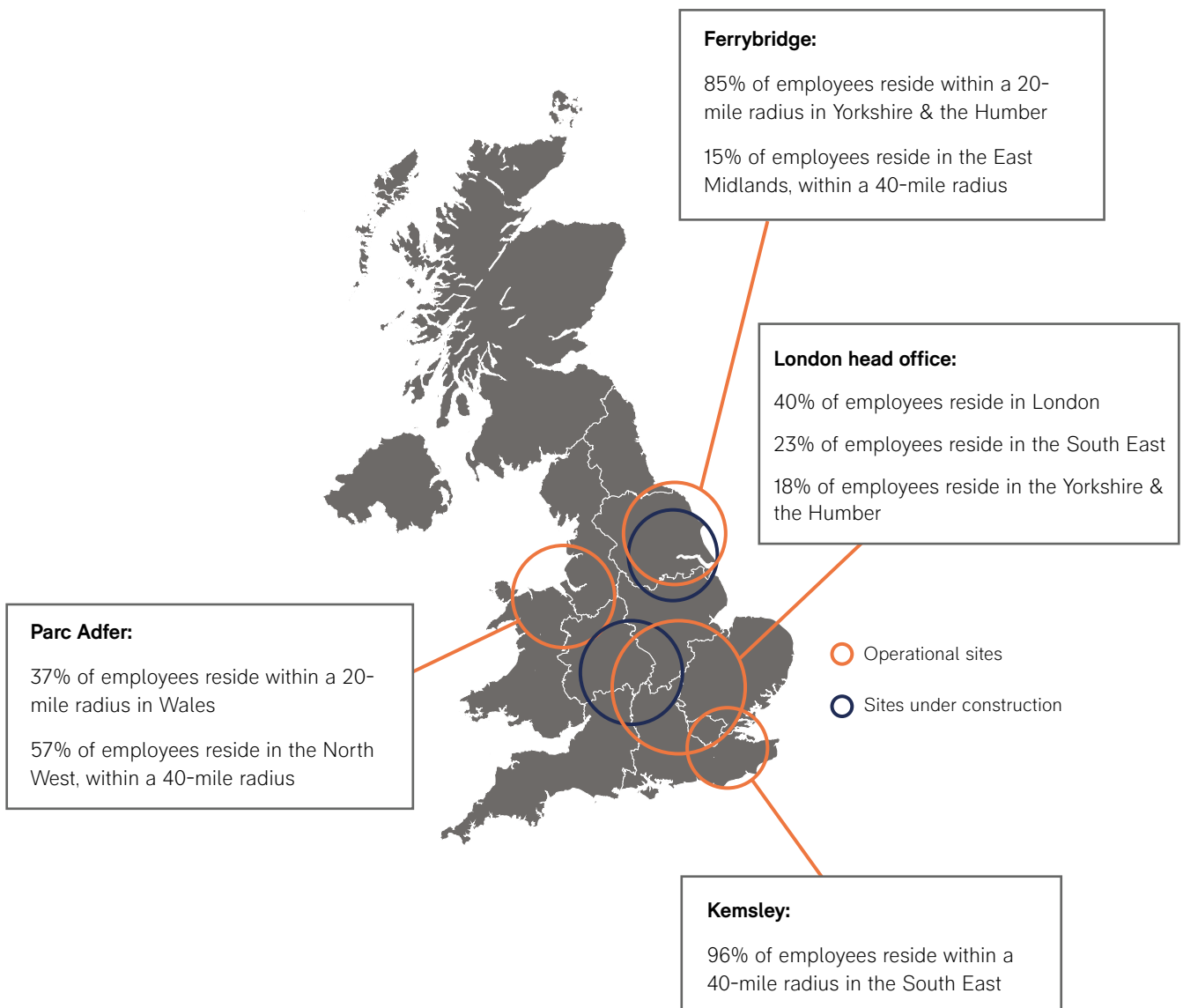
The contribution of enfinium goes beyond the economic value and jobs supported throughout the economy. As a proactive employer in the different communities it operates in, the business plays its part in the surrounding communities. This includes financial support to local causes and practical volunteering and educational outreach. As well as the wider community, enfinium supports and empowers its employees, placing a strong emphasis on a safe and supportive work culture and engaging in employee-led charity work.



### Promoting fair and equitable opportunities amongst all in society

With four operational facilities and another two under construction, enfinium reaches many different local communities across the UK. The majority of the workforce at each facility reside locally, aside from employees based at the London office who regularly travel between the different sites. **Figure 8** shows the distribution of enfinium’s employees by UK region. There is a strong concentration in Yorkshire and the Humber, driven by the Ferrybridge sites and the new Skelton Grange development. However, there is also a clear concentration in the South East, Wales and North West regions, close to Kemsley, Parc Adfer, and the London office.

**Figure 8** Distribution of enfinium’s employees across the UK, employee residence relative to location of work



Source: enfinium, 2022

This distribution highlights the fact that enfinium successfully employs a skilled workforce in these local areas, despite many of the engineering skills required being very specialised and typically difficult to source locally. The level of skill required is reflected in the compensation enjoyed by employees; all occupational job categories at enfinium were paid above the 2022 UK median annual wage, for both males and females. Some integral occupations such as process, plant & machine operatives were paid 70% or more above the national average for those roles, and women working in engineering and STEM occupations were paid nearly 25% above the average median annual wage for those roles.

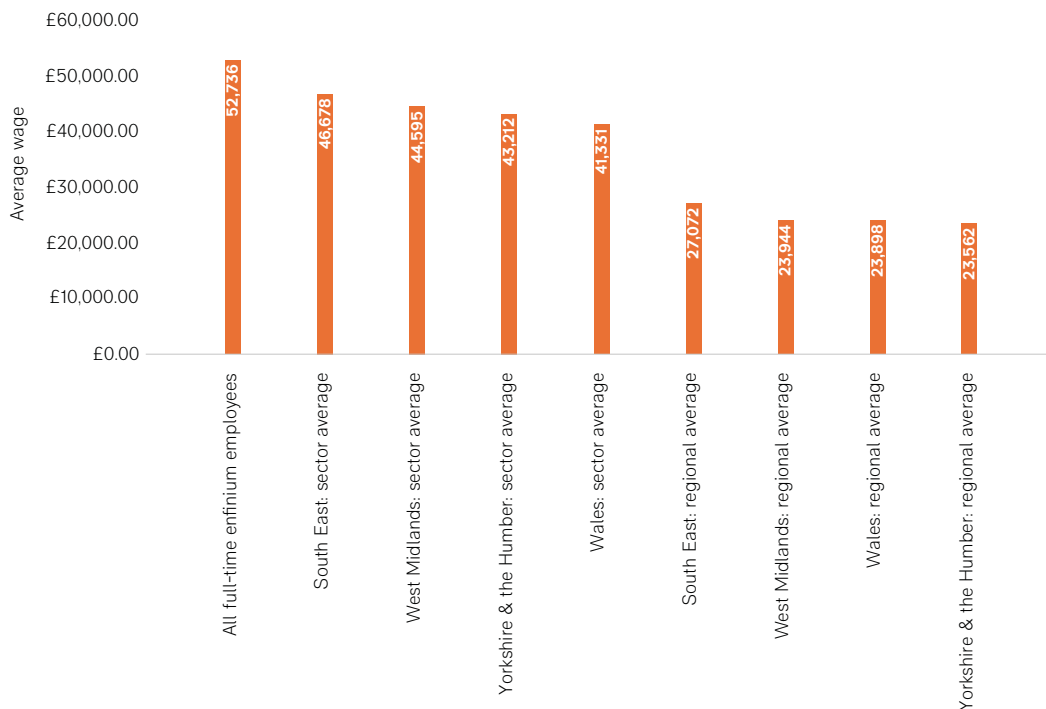


When looking at the wages in a local context, enfinium offers skilled jobs which are paid well, providing opportunities for the local areas around an enfinium site.

**Figure 9** shows that in each of the regions where enfinium operates there is a very favourable wage compared to the regional average and regional sector average (including Skelton Grange and Kelvin when these sites are operational).<sup>ii</sup>

At Ferrybridge, two of the neighbouring five local authorities (LAs) ranked in the bottom quartile for average annual earnings in 2022, with Wakefield (the LA where Ferrybridge is located), ranking in the third quartile with average wages below £30,000. At Parc Adfer, two of the neighbouring Welsh LAs ranked in the third quartile for average wages in 2022, and at Kemsley the LA where the plant is located (Swale) was in the bottom decile for average wages in 2022. Equally, surrounding both Skelton Grange and Kelvin are LAs where the average annual wage is less than £31,000. This is compared to the average full-time enfinium wage of £52,736 across all of the sites.

**Figure 9** Median annual wages by region, and region by sector – enfinium & selected regions



**Sources:** CBI Economics analysis, Office for National Statistics (2022)

ii. Sector average uses wages for the Energy production and supply sector.

Looking beyond annual wages, the LAs neighbouring several of these plants had high unemployment rates in 2021, compared to the rest of the UK. Two of the LAs around Ferrybridge, which also overlap with the Skelton Grange area (Leeds and Kirklees) ranked in the bottom quartile, with unemployment rates over 5% (compared to the average rate of 4.4% for Great Britain as a whole in 2021). Currently around Kelvin, both the LA where the Sandwell plant will be located and three of the neighbouring LAs ranked poorly for employment in 2021, with Birmingham (8%), Walsall (6.5%) and Wolverhampton (6.5%) being in the bottom 20. Equally, a 2019 report from CIPD and J.P.Morgan, looking into the role of Local Enterprise Partnerships (LEPs) and productivity, found that many of the LEPs which cover areas enfinium operates in (including Greater Birmingham and Solihull, Leeds City Region, and Humber) were in a low-skills equilibrium. This is defined as *"a situation of low supply and of low demand for skills."*<sup>6</sup>

By providing skilled jobs at wages well above the regional average, enfinium is providing meaningful employment opportunities. These can then translate into benefits for the local communities, in terms of the increased employee spending and tax revenues. As these areas generally experience low levels of skilled employment, enfinium may therefore offer opportunities which have been previously limited.

However, enfinium's meaningful local impact extends beyond well-paid, skilled jobs. The company is strongly involved within the communities in which it operates, both around the plants which are operational and those still under construction. It has dedicated Community Funds for each plant (as well as its corporate headquarters) which cover a wide range of charitable giving.

These funds provide grants and donations which aim to support areas such as the environment (e.g.: waste reduction/recycling, promotion of clean energy), improved health, safety and wellbeing, social inclusion and education. These funds have contributed over £148,000 to local causes in 2022.

These local causes are concentrated around the operational sites. For example, a large proportion of the donations from the Ferrybridge plant are made within Wakefield local authority, an area in the top 25% of most income deprived English regions in 2019<sup>III</sup> and with one of the lowest levels of GCSE attainment. Therefore, donations to causes such as the Knottingley Foodbank near the Ferrybridge sites and local sports teams provide real value to communities.

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III. The English indices of deprivation (2019) covered 316 local authorities. Other UK nations have different relative measures of deprivation and so results are not directly comparable between nations.



At the Skelton Grange and Kelvin sites, enfinium operates Community Liaison Groups to ensure that relationships with the communities and councillors surrounding the new sites are built early. The group keeps them updated with plans for the sites and seeks to understand how it can best support the local community, for example through volunteering or charitable giving.

At both sites there are dedicated funding pots of £50,000 ringfenced for similar grants and donations to support the local community during the construction phase. These funds have received 10 applications since opening in 2022. Once operational these will be replaced with the same type of Community Fund as the existing plants.



### **Looking closer: Construction phase community funds**

#### **As part of the community engagement during the planning and construction phase, enfinium has charitable funds set up to donate to worthy local causes – a pot of £50,000 per site.**

Working alongside the Community Liaison Groups at each site, enfinium can engage with and develop good working relationships with the communities in which it will be operating for the foreseeable future. As well as demonstrating the new employment opportunities which will be available during both the construction phase and operational lifetime of the site, enfinium can show it cares about the wellbeing of the local community.

10 applications have been received across the two sites since the funds opened earlier in 2022, with funding already being awarded. Two recipients include the Garforth Community Festival, and the Leeds Rowing Club:

Garforth Community Festival is an annual community food and drink festival seeking to improve their sustainability and environmental impact. enfinium have provided funding to allow them to purchase reusable cups for the 2023 festival. In response to an approved funding application, Rebecca Brayson from the Garforth Community Festival team said: *"Thank you so much for the great news, we are all very excited to say the least!"*

Leeds Rowing Club is looking to acquire additional equipment to allow them to widen participation at a junior level. This includes increasing diversity in rowing by visiting and working with schools to introduce people from non-traditional rowing backgrounds to the sport. enfinium have provided funding to allow them to purchase four new sets of oars for a quad rowing boat. In response to an approved funding application, David Cottrell from Leeds Rowing Club said: *"Thank you again for your generous funding. The club is very grateful, and your support will make a big difference to our junior rowing academy."*

At Parc Adfer, enfinium contributes £50,000 per annum to the wider Flintshire County Council Community Benefit Fund (over 20% of the total pot). As part of their wider community activity at Parc Adfer, enfinium are involved with North Wales Wildlife Trust, and have undertaken some important biodiversity work at the site. A large brownfield area was subsequently improved with the addition a pond and bird boxes to encourage local wildlife, and enfinium tracks biodiversity scorecards at the site to ensure the quality of the environment remains as high as possible.

The team at Parc Adfer also volunteer with the North Wales Wildlife Trust, including helping maintain Y Graig, an Area of Outstanding Beauty. There is also a visitor centre at Parc Adfer where the team can host school visits as well as providing an education space for the local community to learn about energy from waste operations and the part that enfinium is playing in the energy transition.

Similar volunteering Kelvin staff have been involved in various volunteering projects with the Canals & Rivers Trust including orchard planting and litter picking. enfinium launched a specific volunteering policy in 2022 to support employees to undertake both company-sponsored volunteering activities and any personal volunteering that employees may be involved with, including a commitment for up to a maximum of two days of paid leave for volunteering each calendar year.

*"I want to thank you and your team for joining us this week and making such an important contribution to the work on the canals in Birmingham."*

**Canal & Rivers Trust**

enfinium is creating social value through its donations and supporting areas which are relatively income deprived. Both Sandwell and Birmingham ranked within the top 10 most income deprived LAs in 2019, and two of the LAs (Barnsley and Doncaster) next to Ferrybridge ranking within the top 50. These areas are also towards the lower end of the average annual earnings rankings, demonstrating the need for the positive value created by enfinium.

## Investing in people and promoting employee success

As well as focusing on the communities around the sites, enfinium places a large emphasis on the value it can add for its staff. Whether it is with regards to the training schemes available for potential new recruits or the wellbeing proposition offered for all staff, it is keen to ensure its staff feel valued and supported.

enfinium understands the importance of supporting the physical and mental wellbeing of its staff, through a strong safety culture and comprehensive wellbeing offering. A recent report from Vitality and CBI Economics showed that employees' unhealthy lifestyle behaviours and poor mental wellbeing accounts for 40% of the UK's productivity loss – equivalent to £39 billion every year.

It offers a full private medical insurance scheme from one of the main health insurance providers to all full-time employees, going further than cash payments or voucher schemes. As part of this scheme, enfinium employees can enjoy benefits such as virtual GP consultations and counselling self-referral options, menopause support and a complete cancer care proposition. Private dental care is also offered alongside the full medical insurance, as are other initiatives which can link to employee physical wellbeing such as a Cycle to Work scheme.

enfinium also places a great value on its employees' mental health. As part of the full private medical insurance scheme, help is available in several forms: access to a programme of mindfulness activities; up to eight cognitive behavioural therapy (CBT) or Talking Therapy session; and if required options for in-patient or out-patient treatments and therapies. It has also trained 19 Mental Health First Aiders to date in 2022 across the different sites, to ensure its staff can talk to a real person on the ground if necessary and offers access to a 24/7 counselling service available through their Employee Assistance Programmes (EAP) with Perkbox and Canada Life.



## Employee engagement – staff survey & policies

**Having recently merged two companies, enfinium recognised that this could be a challenging time for staff, and to ensure they captured their employees' voice, they developed and delivered a staff survey.**

"enfinium are always striving to do the right thing and live by their values"

"The people are all welcoming and encouraging. Our overall mission as a company is inspiring and I am glad to be part of a dynamic and ever-changing organisation."

This survey allowed enfinium to evaluate how employees were feeling about a number of key areas, including Leadership, Development and Engagement. Using the Culture Amp methodology, they were able to record a calibrated and benchmarked 'Good Score', providing them with a base level to measure and challenge themselves against going forwards.

The results of this survey have helped to inform several key employee policies, such as maternity and paternity. enfinium now offer a six months full pay for more than one year services and nine months full pay for over three years of service.

Alongside this, it is constantly looking to modernise and improve upon its corporate policies, including ongoing work to update the parental bereavement and breastfeeding policies. Hybrid working was introduced as a result of the Covid-19 pandemic where possible for employees.

Alongside ensuring its employees are looked after both mentally and physically, enfinium is keen to attract and nurture talent.

enfinium invests heavily in its people as well, currently spending over £300,000 a year on regular training for its employees. On top of that, it has options for further developmental training for staff at all levels. It has recently rolled out a new Learning Management System, following an investment of £65,000, which offers modules to all employees on both operational and managerial skills, with more content being added as the system grows. Management training is also a key part of the enfinium proposition, with a specific Management Development Programme for employees, involving offsite training, as well as MindGym Diversity and Equality training. enfinium will also sponsor ad hoc training for individuals requiring qualifications as part of their roles.

For those just starting out on their journey, enfinium also offers two different training schemes. In partnership with a local training provider, CATCH, they are offering an apprenticeship scheme for students to gain an Advanced Level 3 Diploma in Engineering. Separately, they are developing a Mechatronics Operations Engineering Technician (MOET) training programme, where students will train towards a Level 3 Advanced Diploma in Engineering Maintenance and a Level 3 NVQ in Electrical/ Instrumentation/ Mechanical or Multi-Skilled disciplines. Whilst UK businesses have historically seen training investment per employee falling, compared to an increase across Europe,<sup>7</sup> enfinium is developing a clear, forward-looking pathway to nurture both future and existing employee talent.

### **Apprenticeships**

**enfinium has recently started an apprenticeship scheme, running across its sites, where students train towards an Advanced Level 3 Diploma in Engineering.**

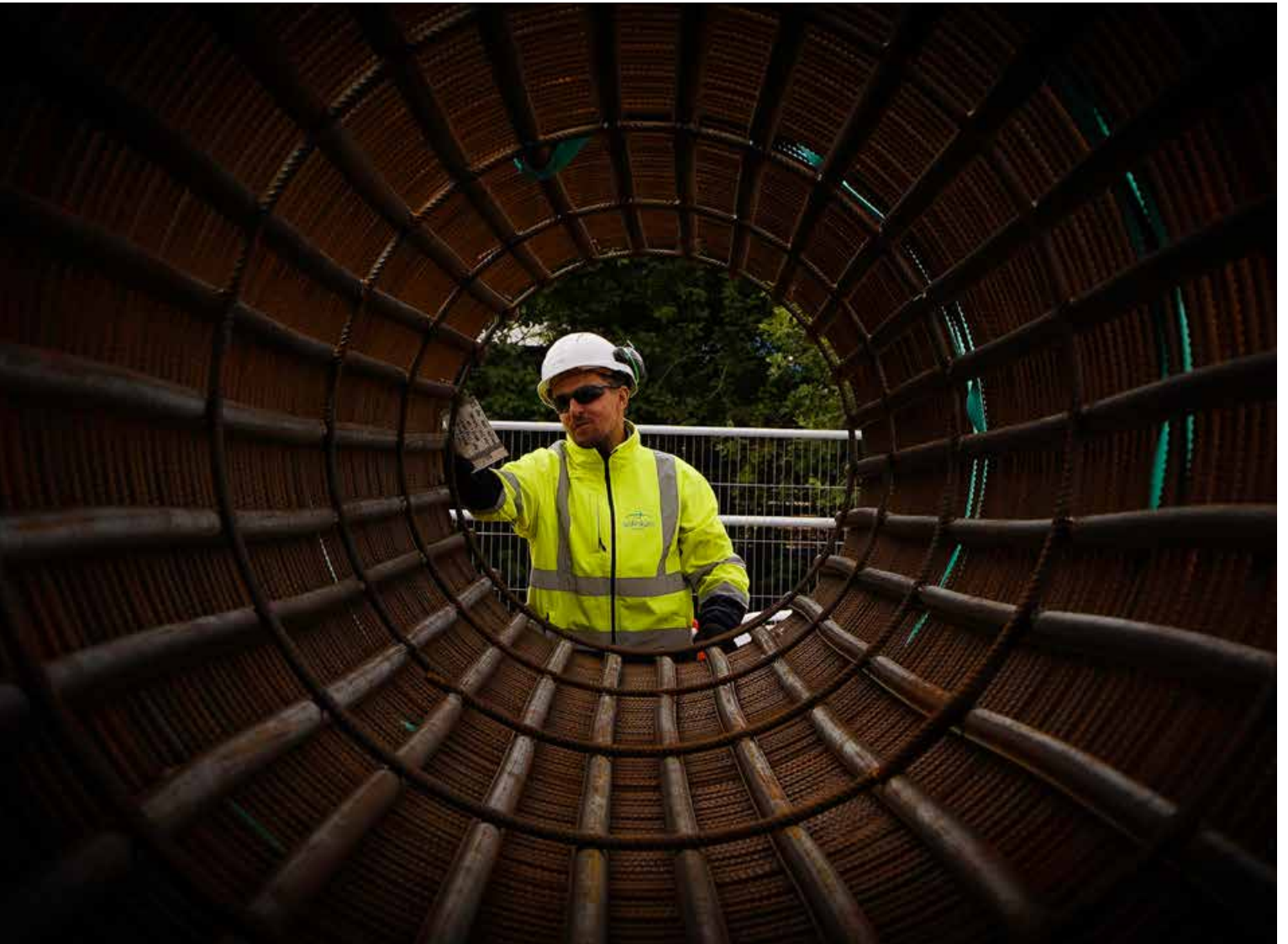
Students on this programme undertake one year of classroom-based learning, and then spend two years onsite at one of the enfinium plants, where they are buddied up with Professional Maintenance Mentors. The estimated proxy social value these years working at the plants bring to the individual students is over £20,000 per person over their lifetime, when taking into account expected increased current and future earnings .

As well as the valuable practical experience gained alongside the qualification, the apprentices have the opportunity to stay with the company in a full-time role post-training if successful, offering a clear route into the job market. Alongside the technical skills gained, apprentices learn valuable workplace skills.

While these training schemes inherently support a skilled career and recognised qualifications, they also provide an opportunity for students who might not otherwise access this type of training. This is because the areas around the plants where enfinium operates are generally ranked poorly in terms of GCSE (or higher) attainment in 2021. For example, Wakefield (Ferrybridge, and near to Skelton Grange) and Sandwell (Kelvin) were in the bottom 50 LAs for GCSE attainment, with Sandwell in the bottom 20. Equally, three LAs around each Ferrybridge and Kelvin, and well as two LAs around Kemsley ranked in the bottom quarter for GCSE attainment.

When considering this in the context of high unemployment rankings and a low-skills equilibrium in many of these areas, there is a clear risk that young individuals in these areas may struggle to access quality training and job prospects. Therefore, it is even more relevant that enfinium is offering these types of courses and opportunities, with qualifications equivalent to A Levels.

These training programmes also demonstrate the role that enfinium is playing in the net zero transition from a skills development perspective. Estimates of additional jobs supported over the next few years to support the transition to a net zero economy range by industry: from 64,000 in solar photovoltaics<sup>8</sup> up to 2035 to 260,000 over the next 30 years in the wider energy sector (as well as 140,000 vacancies due to people naturally leaving the workforce).<sup>9</sup> Whilst there is the opportunity to retrain or upskill many existing workers, there is a clear need for a strong pipeline of skilled workers who can fill these roles. Core skills in science and engineering are crucial for delivering net zero, alongside digital and data skills, project management, and leadership and communication skills.<sup>10</sup> Together, enfinium's multiple training programmes provide these skills to its workers, ensuring they have the tools they need to best help deliver the net zero transition.



# Powering a cleaner economy

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## Safeguarding the environment

In order for the UK to reach net zero by 2050, the energy sector needs to be at the forefront of the transition as it powers the entire economy. However, this transformation to clean power generation requires significant investments to innovate, deploy, and scale new technologies, while also reducing emissions from production.

As the energy crisis of 2022 has shown, building energy security and reducing the reliance on imported fossil fuel sources of energy is an important step in this transition. And, as the 2023 Skidmore Review of Net Zero concludes, diversifying energy sources and doubling down on the production of renewables and low carbon fuels can help to lay the platform for the net zero transition and address supply shortages.<sup>11</sup> As it stands, the energy sector emits more than 1,200 tonnes of CO<sub>2</sub> for every £1 million of output it produces. In addition, the reliability of two of the UK's renewable energy sources – solar and wind power – is variable. However, the UK has a growing energy from waste sector which helps to reduce the UK's non-recyclable (residual) waste, while also using this to produce one of the most reliable sources of energy available. This sector has achieved a 73% reduction in its greenhouse gas emissions between 1990 and 2020<sup>12</sup> and currently emits 14 times less per £1 million of output than the electricity, gas and steam sector.

As one of the key operators of energy from waste facilities in the UK, enfinium is a key part of the solution to the UK's energy security and its transition to renewable energy. Moreover, the company also plays a key role in diverting waste from landfill. Improving recycling rates amongst households and businesses, on its own, is unlikely to eliminate waste. One of enfinium's core ambitions is therefore to help remove residual waste in a way that supports the circular economy and eliminates greenhouse gas emissions.

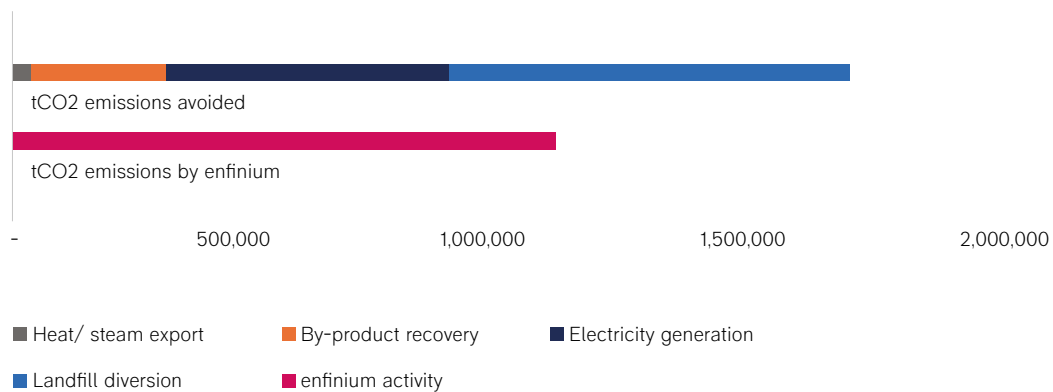
enfinium currently operates a fleet of state-of-the-art waste processing facilities: Ferrybridge 1 and 2, Kemsley, and Parc Adfer – four of 53 operational EfW facilities across the UK, enabling enfinium to hold nearly 14% of the UK market share for EfW. This market share is expected to grow with two new facilities, Skelton Grange and Kelvin, currently in construction and set to become operational by the end of 2025.



Through these facilities, enfinium process a total of 2.3 million tonnes of waste annually, or nearly a fifth (17%) of all waste processed by EfW facilities across the UK. This is equivalent to the waste produced by 6.3 million people, or the entire East of England population. Crucially, the waste processed by enfinium is residual waste which cannot be reused or recycled. enfinium are working with their waste suppliers to ensure that the waste sent to their facilities is only waste which cannot be reused or recycled, providing incentives through their contract specifications and pricing mechanisms to achieve this.

Alongside processing waste, enfinium help to reduce waste from their own processes, by recovering materials such as metals or Incinerator Bottom Ash (IBA) which is recycled into concrete and returning them to the production process. They also capture steam to produce and export energy. They are continually working to capture more of their by-products, including their carbon emissions, with a view to capture 90% of their total emissions in the years ahead.

**Figure 10** Emissions avoided compared to emissions generated



Source: enfinium, 2022



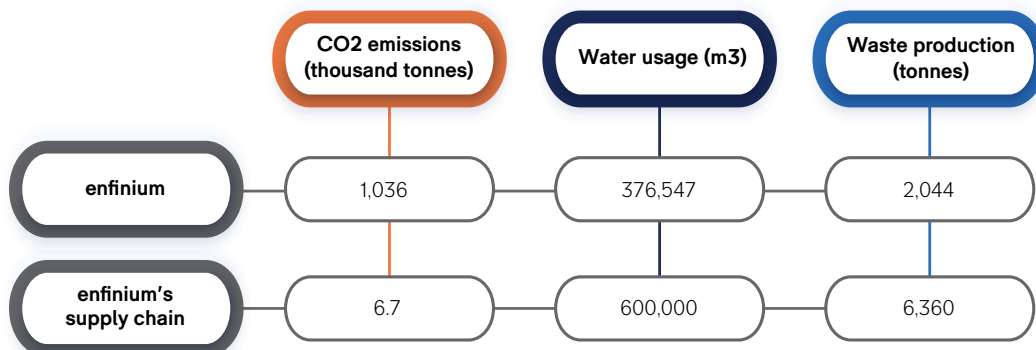
enfinium prevents more emissions than it emits and is a net producer of energy. While the company's production processes emit a total of 1,035,700 tonnes of CO<sub>2</sub>, or 5,300 tonnes of CO<sub>2</sub> for every £1 million of GVA, it delivered savings of more than 565,000 tonnes of CO<sub>2</sub> emissions to the UK economy in 2021. This is equivalent to the emissions of 113,000 individuals. enfinium's facilities are saving over 250kg of CO<sub>2</sub> per tonne of waste, 25% more than the average UK EfW facility. These carbon reductions are achieved primarily through landfill diversion, energy generation and by-product recovery.

This remains a net saving even when including the carbon footprint across enfinium's supply-chain. CBI Economics analysis estimates this adds 6,700 tonnes of CO<sub>2</sub> to enfinium's Scope 3 emissions and taking its total carbon footprint in 2021 to 1,044,500 tonnes of CO<sub>2</sub> (including their Scope 1 and 2 emissions). Alongside this, the construction of its two new facilities adds a further 29,400 tonnes of CO<sub>2</sub> in total over the construction phase, to the end of 2025.

enfinium use 376,500 m<sup>3</sup> of water in their production, or 1,900 m<sup>3</sup> per £1 million of GVA, which compares to 137,100 m<sup>3</sup> per £1m of GVA used by the energy industry or the waste industry (just 1% of the sector's average water usage). Alongside this, enfinium's supply chain adds 0.6 million m<sup>3</sup>, which brings the company's total water use to just under 1 million m<sup>3</sup>, or 5,000 m<sup>3</sup> per £1m of GVA.

Their activities also generate around 2,000 tonnes of waste annually, or around 10 tonnes per £1 million of GVA, compared to 34 tonnes of waste generated by the energy sector for every £1 million of sector GVA. A further 6,400 tonnes of waste is produced by its supply chain, bringing enfinium's total waste to approximately 8,400 tonnes. This nevertheless remains comparatively low when set against the post-recycled waste processed, by a factor of 240 (or 4.1% of the waste processed).

**Figure 11** Total environmental footprint of enfinium



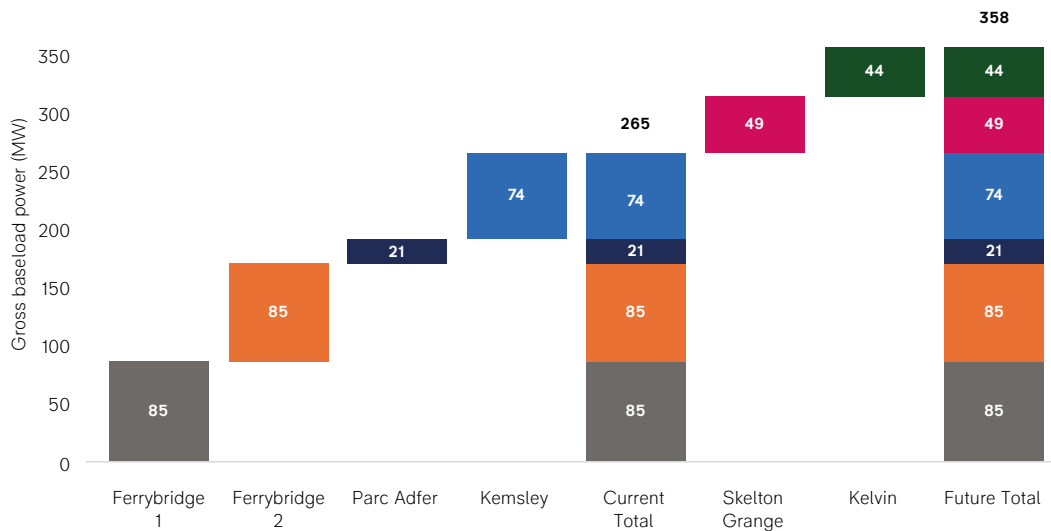
Source: CBI Economics analysis

### Driving energy market growth

The waste used by Enfinium generates a total of 265 MW of energy. A combination of which is electricity exported to the National Grid and steam exported to nearby industrial facilities such as to DS Smith’s paper mill at Kemsley. With the two new facilities currently under construction, Skelton Grange and Kelvin, by the end of 2025, Enfinium will generate a total of 358 MW of baseload (a stable, consistent load of energy) electricity, equivalent to powering over 750,000 homes<sup>13</sup> or broadly the equivalent of Birmingham – the second largest city in the UK.

Notably, Enfinium captures a greater amount of energy from its waste, with all its facilities classified as ‘recovery’ rather than ‘disposal’ operations. This is reflected in R1 values<sup>IV</sup> above 0.65 (and as high as 0.85 for its newest Ferrybridge facility), compared to an industry average of 0.6. This makes their processes among the most efficient in the UK. Their two new planned facilities under construction are expected to be the most efficient in the market, drawing on the latest engineering technologies.

**Figure 12** Total energy generation capacity of Enfinium

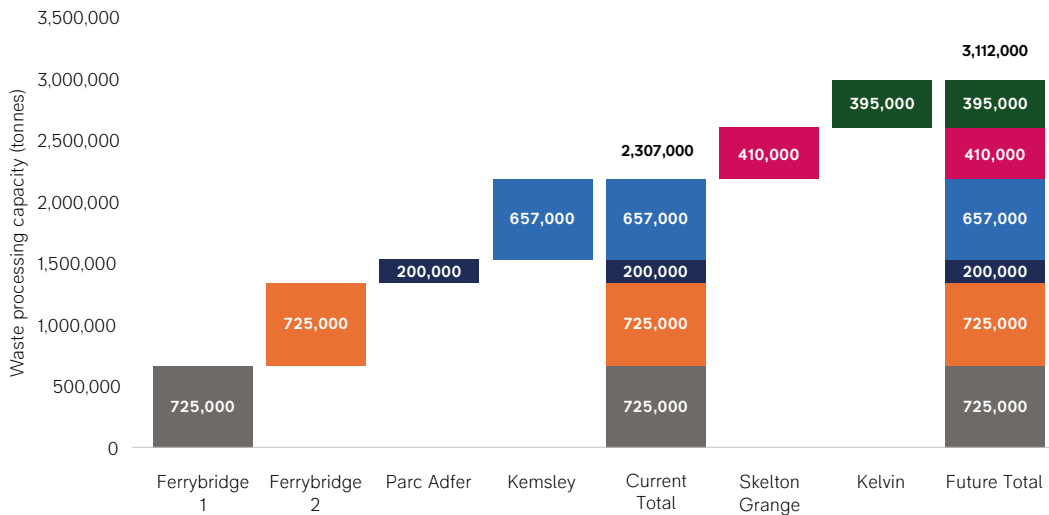


Source: Enfinium, 2022

IV. An R1 value (or the R1 factor) is an indicator for the level of energy recovered from waste passing through a EFW facility. It is calculated as the ratio of energy produced over the energy contained in waste. A facility with an R1 value exceeding 0.65 is classed as ‘recovery’ operation, meaning the process is efficient.

Through its role in generating EfW, enfinium plays a key role in the transition to net zero and other significant emerging markets related to this transition; CBI Economics analysis estimates the economic value of the net zero supply chain to currently stand at £21 billion, with opportunities to more than double by 2030, to exceed £52 billion.

**Figure 13** Total waste processing capacity of enfinium

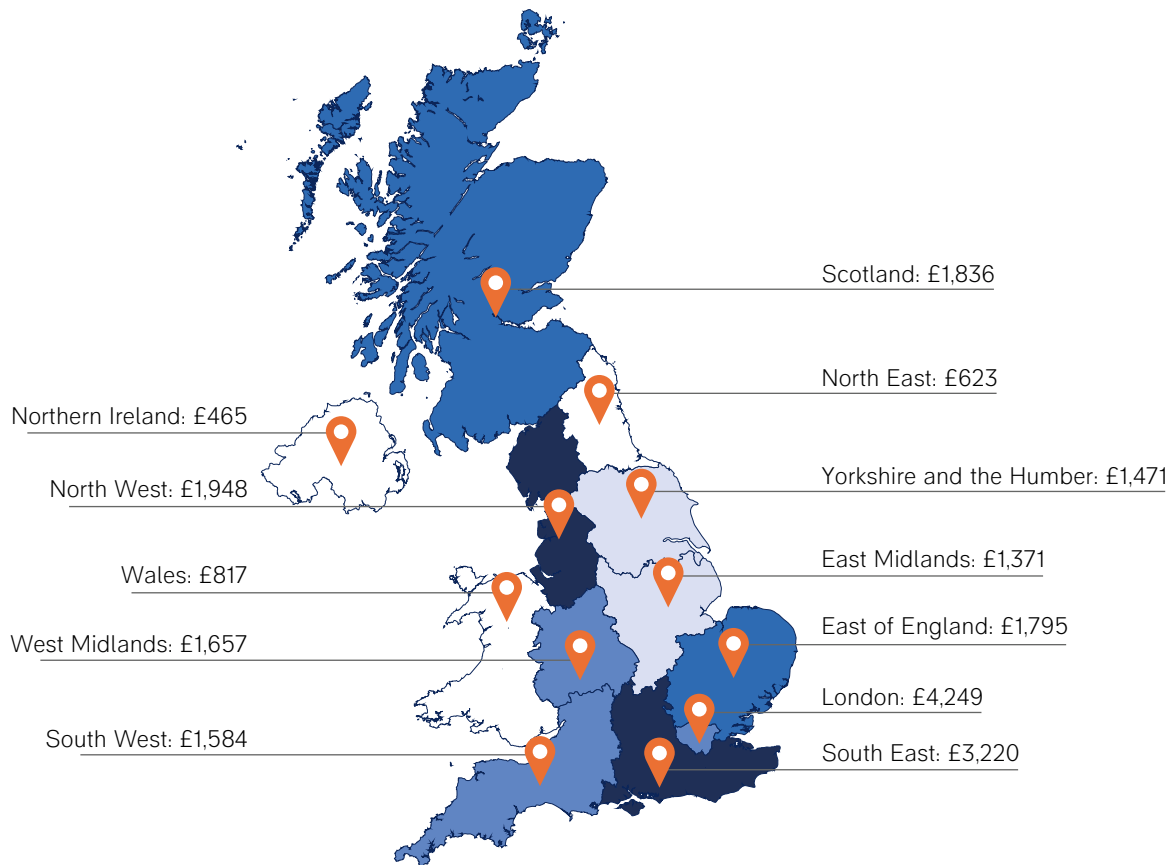


**Source:** enfinium, 2022. Note: current permitted total



The £21 billion contribution of the net-zero supply chain to the UK economy is broken down by region below. This is equivalent to two thirds (77%) of the UK's energy market (electricity, gas and steam production).

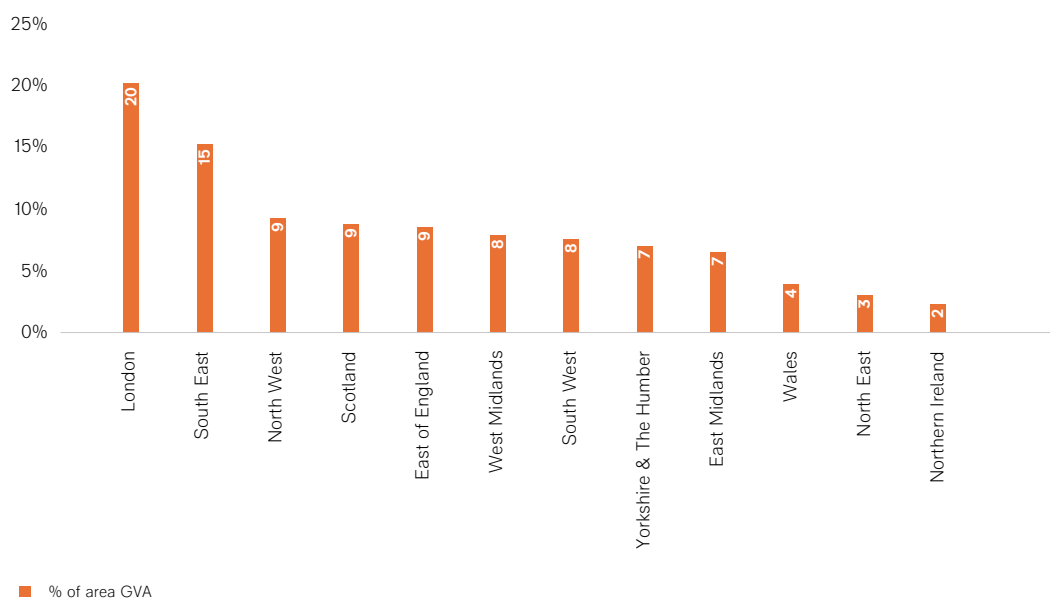
**Figure 14** The regional composition of the UK net-zero supply chain contributions, 2021 (GVA, £m)



**Source:** CBI Economics analysis

London, the South East, and Yorkshire and the Humber are key regions for the UK's net zero supply-chain. enfinium's investments into areas such as carbon capture and storage (CCS) and electrolytic hydrogen will contribute to growth in the regions these are in, but also help to get off the ground nascent markets such as carbon capture and storage, contributing to the UK's net zero capabilities.

**Figure 15** The regional distribution of net zero activity, 2021 (% of total net zero GVA)



**Source:** CBI Economics analysis

### Investing for the future

enfinium are currently in the process of building two new EfW facilities, taking the total number of operational sites to six by 2025. The first is Skelton Grange in Leeds, with enabling works starting in Q3 2021, and takeover expected in 2025. The second site under construction is Kelvin, in West Bromwich, with similar timelines.

The two plants combined will process up to 805,000 tonnes of waste per annum (410,000 tonnes by Skelton Grange and 395,000 tonnes by Kelvin), together increasing enfinium's total capacity by 35%. This is enough to process the waste generated throughout the construction process more than six times over in the first year of operation alone. The energy processed from this plant is enough to power up to 195,000 UK homes and increase the UK's total energy-to-waste capacity by 5%.<sup>v</sup>

The construction of the two facilities will generate nearly £220 million GVA for the UK economy, with around £160 million supporting the local Yorkshire and the Humber region. This does not include the benefits of workers travelling from abroad and staying locally, which will provide a further £19 million of spending for the region.<sup>vi</sup> It is also estimated that the construction of these two facilities will lead to approximately 30 thousand tonnes of CO<sub>2</sub>.

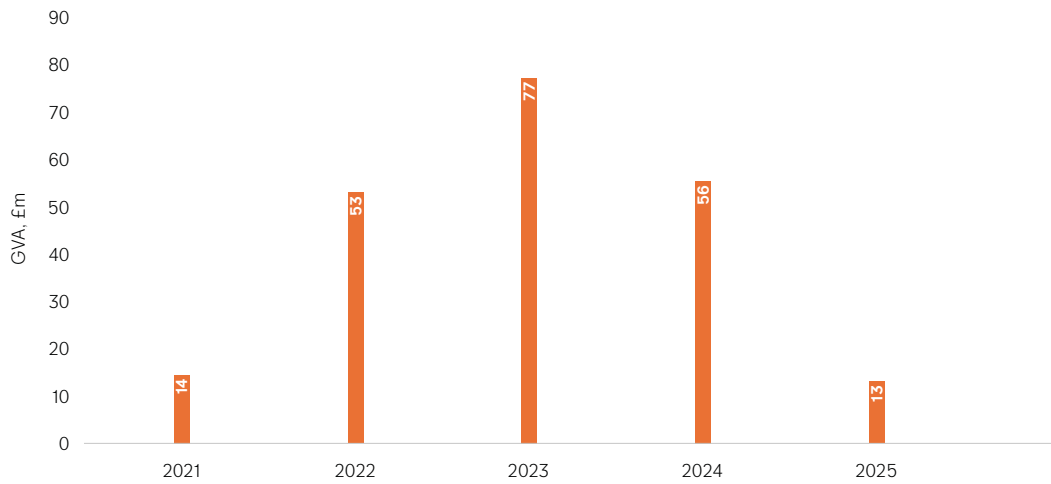
v. EfW capacity figures comes from Tolvik 2021 analysis

vi. Calculated with average spend by EU national in business trip in UK using ONS 2017-2021 data

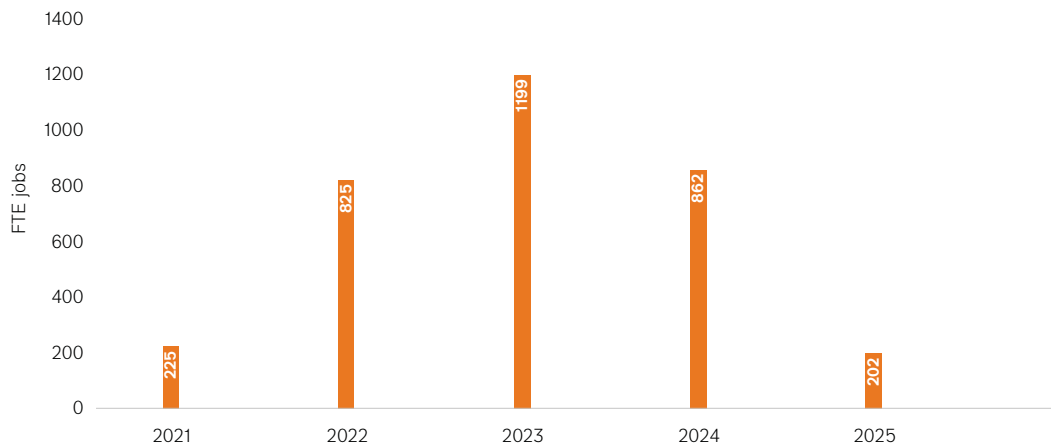
In addition to this, another 3,314 FTE jobs will be supported throughout the supply chain during the construction phase. This is in addition to the 85 full-time jobs created once the plant is operational and a similar amount employed by sub-contractors. Together with Skelton Grange, construction of the two sites will support jobs in the economy over 12 times the size of enfinium’s eventual workforce, once the sites are operational. This is worth around 50% of the number of workforce jobs in the energy sector in the Yorkshire and the Humber as of mid-2022.

**Figure 16** UK economic contribution from Skelton Grange and Kelvin construction

**Total GVA, £m**



**Total FTE jobs**



**Source:** CBI Economics analysis

In addition to their investments to increase capacity and output, enfinium are looking to establish their role within the circular economy and capture more of their by-products as part of their processes. This builds on their existing work in capturing IBA, recycling Air Pollution Control residue (APCr) metals and capturing steam and heat to convert it into energy.

The case study below illustrates how they intend to do this.

### **enfinium's role in the circular economy**

enfinium is an integral business within the UK's circular economy as it diverts waste away from landfills that cannot be reused or recycled, providing businesses and homes with heat and power.

While recycling rates are improving, this will not eliminate residual waste.

- It is believed that even with significant policy intervention and support, recycling rates may only reach 55% by 2035, leaving over 20 million tonnes of residual waste per year.
- Solutions being developed by enfinium manage this residual waste to support the circular economy and eliminate greenhouse gas emissions.

enfinium aim for 100% of the residues from their process to be recycled or reused

- 100% of incinerator bottom ash (IBA) is already recycled. These resources are returned to the production cycle so that additional mining or extracting of new resources is not needed, 408,420 tonnes of IBA by-product recycled per year.
- Air Pollution Control residues have a recycling rate of 62% with plans to increase this to 100%



enfinium also contributes to the circular economy through **sustainable energy generation**. enfinium's four operational sites produce 1.7 million MW of sustainable baseload energy, which comes from a feedstock of 2 million tonnes of local and regional residual waste which would otherwise be sent to landfill or exported.

Through seeking opportunities to produce electrolytic hydrogen, or sustainable fuels to decarbonise transport, using heat in industrial processes to decarbonise the heating of buildings and storing energy for use at times of peak demand, enfinium's facilities play a key role in building a sustainable and energy-secure economy.

As an example, enfinium have partnered with DS Smith, a leading global provider of sustainable packaging solutions, to provide steam generation at their Kemsley Mill (the largest UK mill for recycled paper). As a result, the CO<sub>2</sub> emissions of the mill have been significantly reduced.

This shows that, through their efforts to decarbonise their processes alongside the investments, enfinium plays a clear role in powering the UK economy with reliable energy. This helps to increase the UK's energy security in the years ahead, as well as in reducing waste and supporting the circular economy. The company is also exploring opportunities to capture more of their emissions through investment in CCS technologies, but also to produce electrolytic hydrogen and expand their work on heat offtake to power more of the industrial facilities adjacent to its Kemsley site.

# Conclusion

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The COVID-19 pandemic has created significant disruption across the globe and transformed the landscape for business and livelihoods. Together with Brexit and the war in Ukraine, the pandemic has created a series of supply shocks which have raised inflation, driven a synchronised global tightening in monetary policy and tipped the UK into a recession in the autumn of 2022. The current outlook for the UK economy is one of weak private sector activity, with GDP not expected to return to its pre-pandemic levels until 2025 and real household incomes set to decline to 2014 levels in 2023.

One of the key risks for the UK economy is a path of anemic growth and wider income inequalities across the UK's regions and local areas. Within this context, business confidence to invest and create economic opportunities is now more important than ever – not just to ensuring increased prosperity for all in society, but also in securing the UK's energy security and greening the economy. Green growth can support this objective.

CBI Economics analysis shows that enfinium has a key role to play in promoting fair and equitable opportunities across the UK's regions and in powering a greener, cleaner economy.

The analysis found that in 2022, enfinium contributed £242 million to the UK economy and supported 1,047 FTE jobs. These jobs are highly productive, with employees at enfinium's EfW facilities being 15 times more productive than the average Yorkshire and the Humber employee or four times more productive than an average employee in the energy sector. The company also supported economic activity and employment throughout the wider UK and regional economies, through their expenditure with more than 600 suppliers, their contributions stretching far and wide across the UK.

enfinium play a key role in the communities adjacent to their sites. Most of its workforce is local and there are significant efforts made to reach out into local schools and colleges to promote their employment opportunities. enfinium also train their employees from the start of their careers as apprentices and continually throughout their careers with the company. Given the scale of the net zero transition, especially considering the large number of skilled jobs which will be created, this investment in both the local community and their own workforce is an important part of the wider social value they create. This is complemented by the other charitable work within these communities, and the value that enfinium places on employee wellbeing, evidenced by the range of investment in its staff.

Furthermore, enfinium has demonstrated their commitment to powering a green economy by investing in two new EfW facilities. These sites are set to increase their capacity of processing waste by 40%, to 3.1 million tonnes of waste, and generate a total of 358 MW of baseload power – enough to power 750,000 homes. Alongside this, their investments will generate more than £200 million in additional economic value and support more than 3,300 jobs.

Going forward, the company are seeking new opportunities to contribute towards the transition to net zero carbon emissions, with an ambition to capture more than 90% of their emissions and invest in electrolytic hydrogen. However, the policy environment for these investments is likely to play a role in enfinium's ability to realise this potential, helping to break down the barriers that currently make investments in hydrogen and CCS technologies challenging and unlocking green growth.



# Appendix A: Economic model

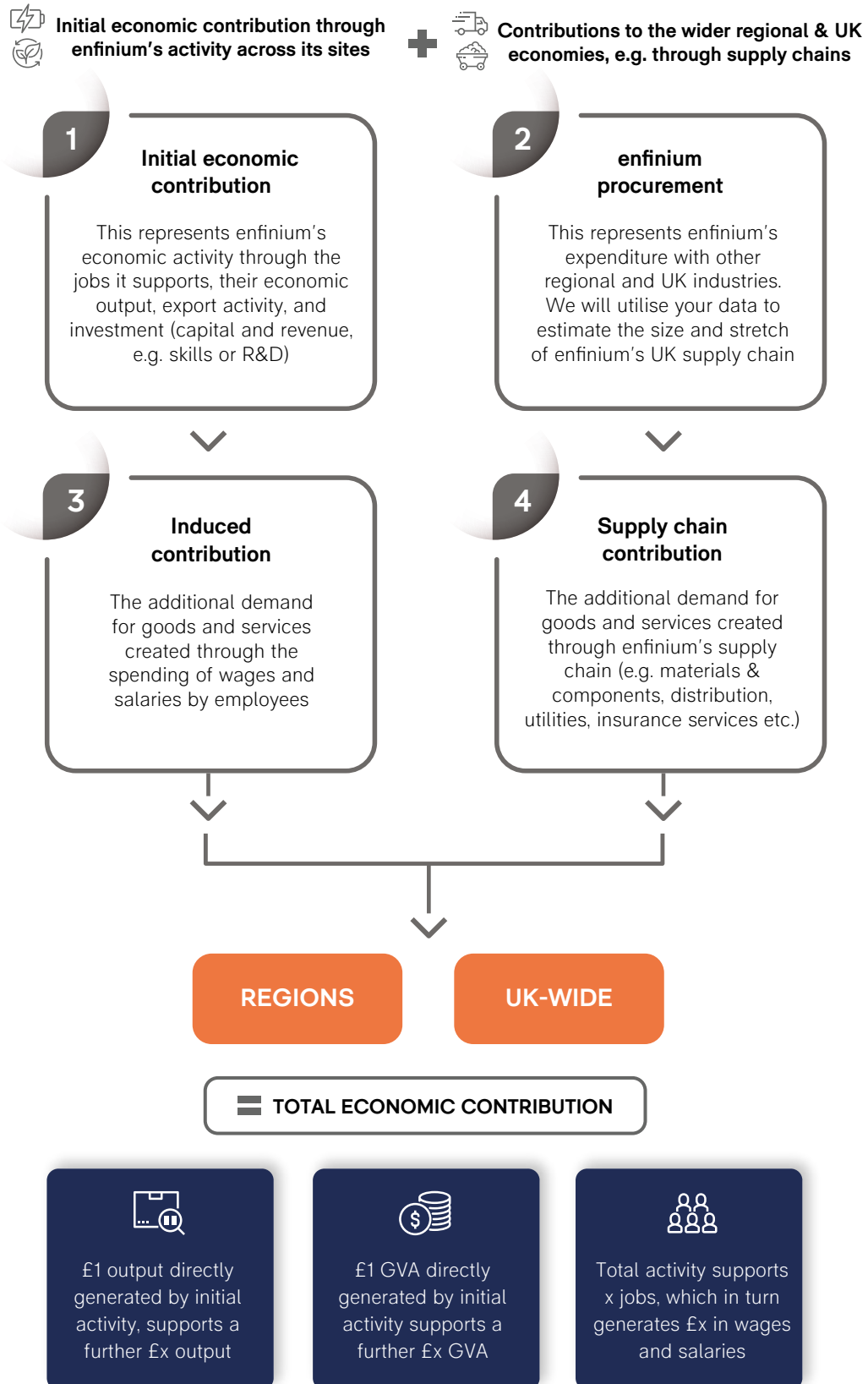
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To model the economic contribution of enfinium, we have used enfinium's financial, employment and procurement data to estimate the Gross Value Added (GVA) and employment contributions of their activity across the UK and their immediate suppliers. We subsequently used our in-house *Economic Contribution* model to estimate the wider economy contributions through the rest of enfinium's supply chain (the supply chain behind their immediate suppliers) and through their employees' spending on goods and services throughout the economy. This makes our approach a 'bottom up' one, which draws predominantly on enfinium recorded data to estimate their contributions, as opposed to a 'top down' approach which utilises official industry-wide statistics on GVA and employment and assumes enfinium's contributions are in line with their industry.

Our economic contribution model draws on the *input-output framework* which allows for the computation of multipliers which capture the inter-dependencies between this sector and other sectors of the economy, both through supply-chain channels and through the spending of employees' wages and salaries on goods and services provided in the wider economy.

We have adopted this methodology to provide a robust and independent evidence base that quantifies the economic contribution of enfinium in its totality (i.e.: the direct effects plus the knock-on effects through the supply chain and on the labour market).

**Figure 17** Overview of the economic contribution model



The input-output framework draws on the Input-Output Analytical Tables derived from the UK and Scottish National Accounts. It traces the transaction flows between both different industries and other sectors of the economy which capture all the potential sources of demand for an industry's economic output (e.g.: households, government, export demand, capital investment). This shows both the supply chain relationship (through industry inter-dependence) and the consumer/producer relationship within the economy. It also outlines the sets of inputs required in the production of one unit in addition to inputs purchased from other industries. These are the primary inputs, which include GVA, imports, and taxes on products.

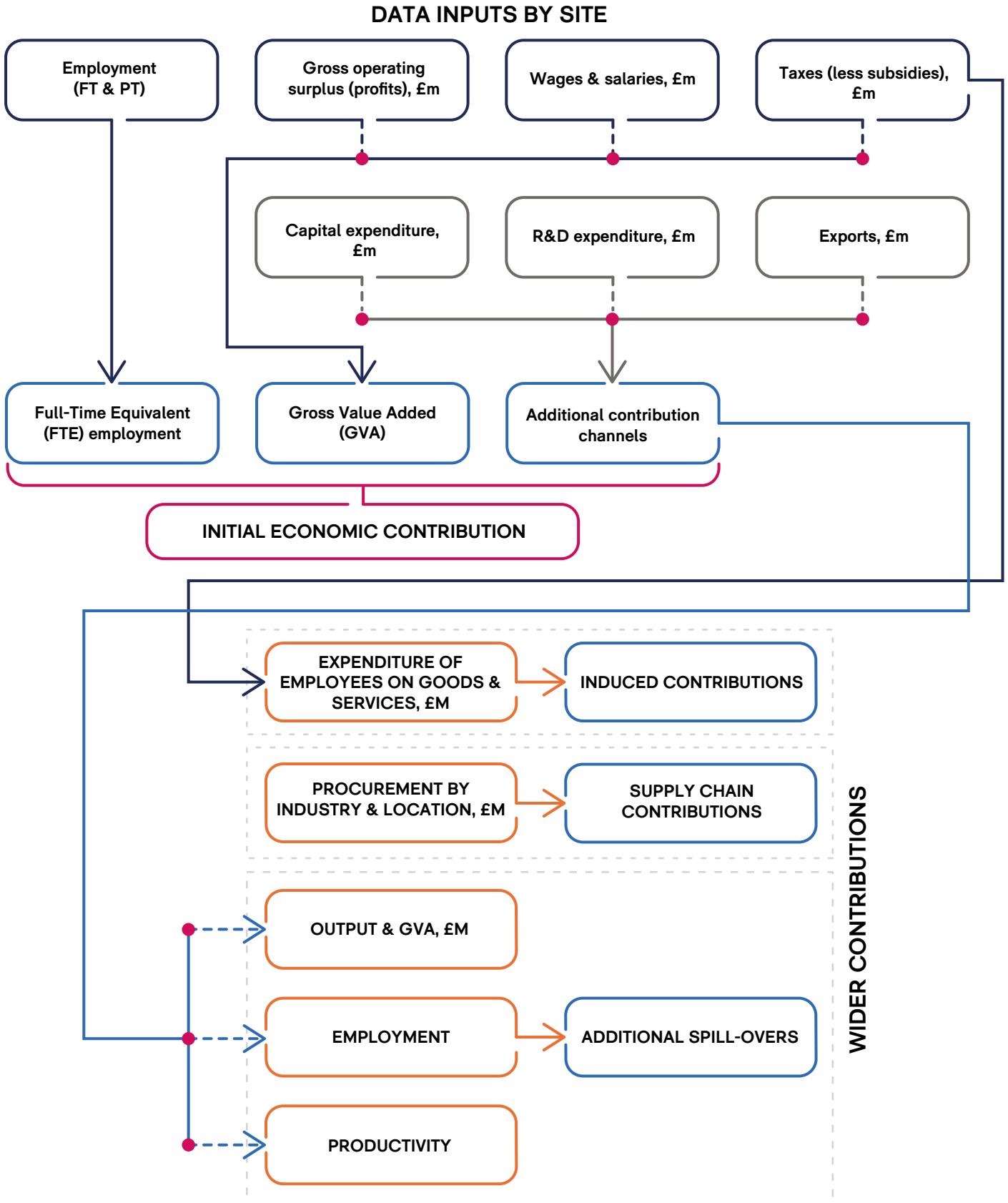
The total economic contribution of enfinium is estimated through this model by quantifying the interactions between the business and its supply chain and household income. **Type I** include the direct (first tier of supply chain) and indirect effects (rest of the supply chain), and **Type II** includes direct, indirect, and induced effects (the effects attributable to further spending generated with industries by the wages and salaries of the jobs supported). These multipliers essentially add up the effects across all industries, capturing the extent of the economic contribution throughout the wider economy. For this modelling, Type II multipliers were used.



### Data inputs

To ensure that enfinium’s activities and impacts are captured accurately, financial data was collected which is summarised in **Figure 18** below.

**Figure 18** Overview of the data inputs



# Appendix B: Net zero supply chain model

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The traditional sectoral classifications in the UK were last updated in 2007, prior to the net zero commitment. As a result, they provide limited insight into business activity in green or low-carbon sectors. Therefore, there is less data available for businesses and local authorities to understand the opportunities for investments and the potential implications of the transition on their operations.

By using Real-Time Industrial Classifications (RTICs) to define the net zero supply chain based on the 14 sub-sectors, this taxonomy is used to build a machine learning training set for each sub-sector. Each training set consists of companies which are highly representative of the industry sub-sector, as well as companies which are not within the industry.

To model the £21 billion net zero supply chain, the following steps were undertaken:

1) Define the net zero supply-chain

A literature review informs the key sub-sectors that should form the net zero supply-chain, including a review of the ONS Low Carbon and Renewable Energy Economy database. This formed a taxonomy of 14 relevant sub-sectors.

2) Identify relevant businesses

The taxonomy is used to build a training set for each sub-sector. Each training set consists of companies which are highly representative of the industry vertical and companies which are not within the industry – in essence training the machine learning algorithm to automatically identify other relevant businesses.

3) Modelling the GVA and employment contributions

Once these businesses have been identified, they are mapped to their Standard Industrial Classification (SIC) code, and employment and financial information is collected for each individual business from Companies House, and aggregated up to the 14 sub-sectors. The employment figure is then split by SIC code, which are then inputted into the economic model to estimate the size of the net zero supply-chain.



Having derived estimates for the total economic contribution of the net zero ecosystem in the UK, additional analysis provides a regional perspective for these estimates. The UK-level impacts were apportioned to NUTS1 regions according to their share of the UK corresponding sector. This utilised additional data to apportion the UK-level contributions to sub-national levels. In particular, the use of regional GVA data and regional employment data provided by the ONS and applied for each industry.

To provide a forward-looking view of the net zero supply-chain, against the investments planned by enfinium, these figures are then forecasted forwards which were particularly informed by the growth rates of renewables and renewable energy as the largest sub-sectors of the net zero supply-chain.



# References

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1. Tolvik, UK EfW Statistics 2021, May 2022
2. Bank of England (2023), Monetary Policy Report – February 2023
3. CBI (2023), Green Growth: The UK is falling behind (January 2023). Available online at: [https://www.cbi.org.uk/media/rdkjb4u/green-growth\\_supplementary-release\\_jan-2023\\_final.pdf](https://www.cbi.org.uk/media/rdkjb4u/green-growth_supplementary-release_jan-2023_final.pdf)
4. Department for Business, Energy & Industrial Strategy (2023), Mission Zero: Independent Review of Net Zero – final report (January 2023). Available online at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1128689/mission-zero-independent-review.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1128689/mission-zero-independent-review.pdf)
5. Ministry of Housing, Communities & Local Government (2019), English Indices of Deprivation 2019
6. CIPD (2019) Productivity and Place available from: [https://www.cipd.co.uk/Images/productivity-and-place-the-role-of-leps-v2\\_tcm18-54430.pdf](https://www.cipd.co.uk/Images/productivity-and-place-the-role-of-leps-v2_tcm18-54430.pdf) (accessed 20/12/2022)
7. CIPD (2019) Addressing employer underinvestment in training Available from: [https://www.cipd.co.uk/Images/addressing-employer-underinvestment-in-training\\_tcm18-61265.pdf](https://www.cipd.co.uk/Images/addressing-employer-underinvestment-in-training_tcm18-61265.pdf) (accessed 06/02/23)
8. Engineering UK (2022) Net Zero Workforce: An analysis of existing workforce Available from: [https://www.engineeringuk.com/media/318694/net-zero-workforce\\_engineeringuk\\_2022-11-29-no-idric.pdf](https://www.engineeringuk.com/media/318694/net-zero-workforce_engineeringuk_2022-11-29-no-idric.pdf) (accessed 16/12/22)
9. National Grid (2020) Building the Net Zero Energy Workforce available from: <https://www.nationalgrid.com/document/126256/download> accessed (20/12/22)
10. Green Jobs Taskforce (2021) Report to Government, Industry and the Skills Sector available from: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1003570/gjtf-report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1003570/gjtf-report.pdf) (accessed 20/12/22)
11. Department for Business, Energy & Industrial Strategy (2023), Mission Zero: Independent Review of Net Zero – final report (January 2023). Available online at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1128689/mission-zero-independent-review.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1128689/mission-zero-independent-review.pdf)
12. Department for Business, Energy & Industrial Strategy, 2020 UK Greenhouse Gas Emissions, Final Figures, February 2022. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1051408/2020-final-greenhouse-gas-emissions-statistical-release.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1051408/2020-final-greenhouse-gas-emissions-statistical-release.pdf)
13. Department for Business, Energy & Industrial Strategy (2021), Energy Follow Up Survey: Household Energy Consumption & Affordability. This provides the figure for the average energy consumption of a household.



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