2023

SUSTAINABILITY REPORT

ENCYCLIS

CONTENTS

LIST OF ABBREVIATIONS USED IN THIS REPORT

A number of abbreviations and acronyms have been used in this report to save space and aid legibility. Those key phrases are as follows:

APCr	Air Pollution Control residues
CO_2	Carbon Dioxide
CCS	Carbon Capture and Storage
DESNZ	Department for Energy Security and Net Zero (UK)
DMA	Double Materiality Assessment
DWtE	Dublin Waste to Energy (Encyclis facility)
EA	Environment Agency
EfW	Energy from Waste
ELT	Executive Leadership Team
ELV	Emission Limit Value
EPA	Environmental Protection Agency (Ireland)
ERF	Energy Recovery Facility
EV	Electric Vehicle
GHG	Greenhouse Gas Emissions
IBA	Incinerator Bottom Ash
IMS	Integrated Management System
ISO	International Organization for Standardization
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
tCO_2e	tonnes of Carbon Dioxide equivalent
UNGC	United Nations Global Compact
WtE	Waste to Energy (the name for Energy from Waste in Europe)

A full glossary of terms can be found on page 94 of this document.

1. INTRODUCTION

AN INTRODUCTION FROM THE CHIEF EXECUTIVE

I am proud to introduce our Sustainability Report for 2023. This sets out the strong progress that we have made on the delivery of our decarbonisation strategy reflecting our ongoing commitment to be part of the solution towards net zero.

We are ultimately dedicated to playing a key role in empowering and supporting a sustainable future for the UK, through setting new standards of sustainability in the Energy from Waste industry.

This purpose carries great responsibility. It is essential for us to properly demonstrate to our stakeholders how our work contributes to net zero both globally and locally and how we make our operations as sustainable as possible.

This report showcases the progress we have made in the delivery of our decarbonisation plans and the further works needed to deliver the full extent of our ambition. This includes our work in establishing a pathfinder project to implement carbon capture at full commercial scale, alongside our aim to achieve complete circularity in our operations by 2030 by recovering all possible resources from the residual waste we receive. It also reflects on the need to continually reinforce our position as an employer of choice and our role as a 'good neighbour' in all our host communities.

This is an exciting time for the business, with the addition of the Newhurst Energy Recovery Facility to our portfolio of operational assets in the UK and Ireland. Our facilities continue to provide an essential public hygiene service by treating non-recyclable residual waste and producing baseload electricity and heat, with Newhurst offering the capacity to treat 455,000 tonnes of residual waste annually. In addition, our new bottom ash treatment facility in Wellingborough and our ongoing partnership with O.C.O Technology ensure that all residues from the combustion process can be recycled. The secondary aggregates produced from our ash help to minimise the use of primary aggregates in construction, and all remaining metals are extracted for recycling.

I am particularly pleased that our partnership with the UK Government continues to progress towards the delivery of carbon capture and storage (CCS). The CCS plant proposed for Protos ERF will capture up to 350,000 tonnes of Carbon Dioxide (CO_2) per year, utilising the planned HyNet pipeline to transport CO_2 for storage in depleted gas fields in Liverpool Bay. Following detailed technical work and thorough public consultation, we submitted our planning application for the facility at the end of 2023 – highlighting the facility's importance in national decarbonisation efforts, while supporting new jobs and investment in the North West of England.

We can always do more. As the CEO of Encyclis, Chair of Resource Recovery UK, and a global citizen, I want to ensure that Encyclis fulfils its role as part of an integrated waste management ecosystem whilst continuing to support the fundamental principles of the waste hierarchy. This includes working to decarbonise our host communities, where some 80% of the UK's domestic heating remains powered by gas. With the right public-private partnerships in place to provide necessary pipeline infrastructure, Energy from Waste plants can offer to be the primary heat source for district heat networks. Supporting the delivery of district heating initiatives local to our facilities continues to be a key priority for Encyclis.

Collaboratively working in partnership is a central part of how we will deliver emission reductions whilst improving the sustainability of both our operations and our supply chains. We will continue to work closely with commercial partners, suppliers, local authorities, regulators and national government bodies to make this possible.

This Sustainability Report reflects the progress made by our teams and our achievements in 2023. It also highlights our ongoing challenges and the targets we have set to ensure we continue to hold ourselves accountable to our host communities, our stakeholders, and the UK's commercial businesses and domestic population who generate the waste we process. This all helps to deliver our mission to become an industry leader and support the UK's progress towards net zero.

Owen Michaelson
Chief Executive

AN INTRODUCTION FROM THE CHAIR OF THE SUSTAINABILITY COMMITTEE

As Chair of the Encyclis Board Sustainability Committee, I am pleased to see the company delivering on the commitments published in its 2022 Sustainability Review last year across a range of environmental, social and governance goals.

The baseline review of 2022 provided a benchmark for the business in its early growth stage. As a newly established business, Encyclis needed to develop effective oversight of its plans for health and safety, climate transition and progress to net zero, whilst ensuring that its diversity, equality and inclusion policies align with the culture and priorities of the business.

The necessary processes and procedures became embedded in 2023. Encyclis is now monitoring and measuring its commitments within a robust company structure, as evidenced in this report. In my role as a member of the Board, I will continue to encourage the strategies and values required to ensure the company's long-term growth and success within the boundaries of sustainable practice.

Our commitment to good governance is well demonstrated by our efforts to create a safe, healthy and risk-aware workplace and I am delighted to report that we secured triple ISO certification (ISO 9001, ISO 14001 and ISO 45001) for our Rookery South facility in 2023 (as we signposted in last year's review) and were able to secure the same status for our newest operational facility at Newhurst.

One of my responsibilities is to assess how political frameworks and regulations will influence our future work. Looking forward, the inclusion of Energy from Waste in the UK Emissions Trading Scheme (ETS) will be the biggest regulatory intervention on the waste sector in a generation. To ensure sustainable waste management continues, Encyclis is working hard with its peers, trade associations, and government to ensure a clear policy framework that enables effective implementation.

The Corporate Social Responsibility Directive will require a compliant annual report to be published in 2025 and bring European sustainability reporting frameworks in line with fiscal practice so that clear parallels can be drawn across the industry in performance measurement.

This has been a year of tangible progress but there is more to achieve. I am confident that we have suitably robust processes and structures in place to deliver on our commitments across the business, backed by reliable monitoring systems to provide the data to track our progress over the long term.

Miriam Greenwood OBE DL
Chair of Sustainability Committee &
Encyclis Board Non-Executive Director

1.1 ABOUT ENCYCLIS

OUR PURPOSE:

EMPOWERING AND SUPPORTING A SUSTAINABLE FUTURE, SUPPORTING THE TRANSITION TO A CIRCULAR ECONOMY AND THE UK'S AMBITIONS TOWARDS NET ZERO

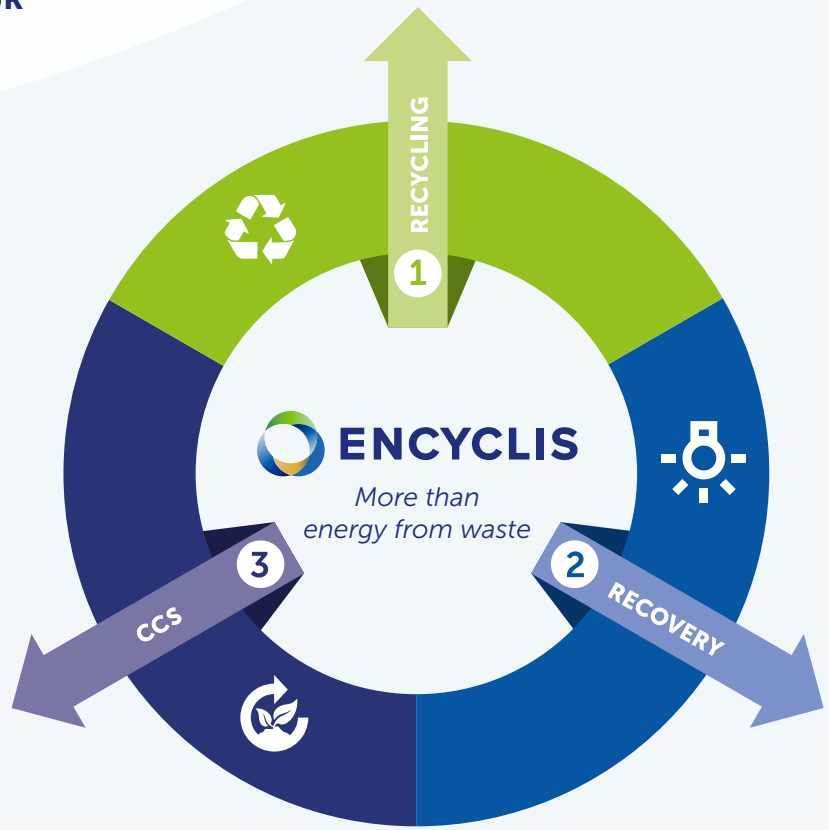
Encyclis is a leader in the development and operation of Energy from Waste (EfW) facilities, operating highly efficient recovery (R1 classified)[1] facilities in the UK and Ireland. We are determined to set new standards of sustainability in our industry.

When our current development sites become operational alongside our existing facilities, we will be diverting over 2.9 million tonnes per annum of residual waste from landfill and overseas export. This non-recyclable waste will be turned into over 264MW of sustainable baseload electricity, plus heat and other practical resources – such as recovered ash and metals – to accelerate the circular economy of the future.

1. Defined within the Waste Framework Directive as "any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function." Plants that do not reach the minimum standard are classified as 'waste disposal facilities. Our Dublin facility follows a different methodology to calculate energy efficiency set by the Irish Government's Environmental Protection Agency (EPA), which requires the facility to exceed a minimum energy efficiency rating. Data on these ratings can be found on page 87

1.1 ABOUT ENCYCLIS

RECOVERING AND RECYCLING RESOURCES FUNDAMENTALLY MEANS THE DELIVERY OF THREE WIDER ENVIRONMENTAL OBJECTIVES BEYOND OUR ROLE IN TREATING NON-RECYCLABLE WASTE AND GENERATING BASELOAD ELECTRICITY.



1. ENSURING RESIDUES FROM THE PROCESS ARE RECYCLED OR REUSED

The ash that results from our waste treatment process is recycled in specialist plants to create aggregate materials for the construction industry. We continue to work toward increasing this rate to 100%.

In addition, metals are recovered from that ash for reuse. Through this, we return valuable resources to the production cycle and avoid the need for mining or extracting new material, which is both energy intensive and harmful to the environment.

2. DELIVERING ENERGY BEYOND ELECTRICITY

We provide a core public hygiene service and generate sustainable baseload electricity to power communities. In addition to this, we are committed to supporting other critical infrastructure through the deployment of district heating for local communities, playing a vital role in further decarbonising UK homes.

We are actively progressing opportunities to export heat to support the UK's decarbonisation journey.

3. CAPTURING CARBON EMISSIONS THROUGH CARBON CAPTURE AND STORAGE (CCS)

CCS is critical to a sustainable pathway to net zero for the industry. However, technology at sufficient scale is still at an early stage, and uncertainty around carbon pricing and transport networks make the economics unclear.

We are investing in understanding how CCS can work for our facilities. We are at the forefront of delivering CCS, with our Protos plant being identified as a preferred option for funding by the UK Government as part of the HyNet cluster.

Protos is just the beginning. Through this process, we will work with wider industry to improve this technology, increasing expertise to support its roll-out to other plants.

1.1 ABOUT ENCYCLIS

THE WAY IN WHICH WE ACHIEVE OUR PURPOSE MATTERS.
WE ARE DEDICATED TO:

Maintaining a rigorous focus on continuous improvement, including the integration of new technology to further improve our environmental performance.

Using our role and purchasing power to make responsible procurement decisions in supporting the growth of the circular economy.

Creating a safe, healthy and risk-aware workplace that strengthens our position as an employer of choice.

Achieving the highest standards of compliance and certification in all our work.

OUR MISSION

CONTINUING TO ENSURE SAFE AND SUSTAINABLE WASTE MANAGEMENT USING BEST AVAILABLE TECHNIQUES (BAT)

DECARBONISING OUR OPERATIONS

CONTINUOUSLY IMPROVING RECOVERY AND RECYCLING RATES

FACILITATING THE TRANSITION TO A CIRCULAR ECONOMY

USING OUR INFLUENCE IN INDUSTRY TO ACCELERATE A NET ZERO FUTURE

1.1 ABOUT ENCYCLIS

OUR PORTFOLIO

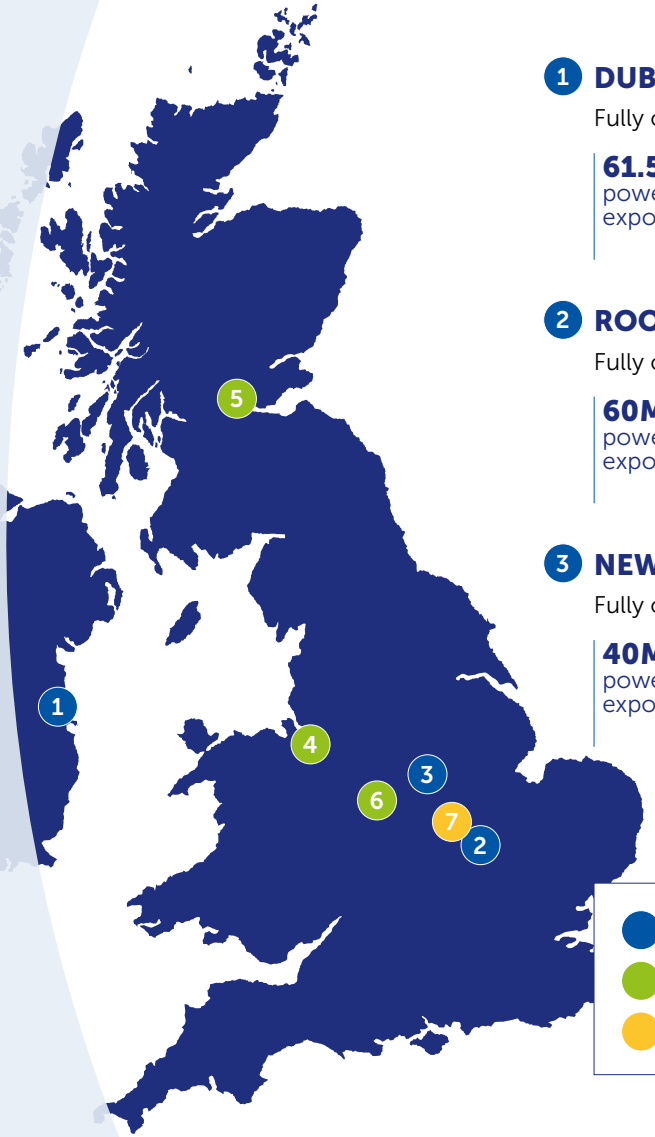
We have one of the largest portfolios of R1-classified energy recovery facilities across the UK and Ireland and are developing additional facilities that will directly support decarbonisation and the circular economy.

Encyclis grew out of the UK-based European operation of Covanta Corporation to become a standalone company in 2022, under the continued ownership of EQT.

Our energy recovery facilities are some of the most technically advanced and efficient in the world, managed by a highly skilled workforce. By the end of 2023 we had two operational plants in the UK and one in Ireland, with three more under construction and due to enter service between 2024 and 2027.

We also made progress in 2023 to enhance our portfolio to directly support decarbonisation and the circular economy. This includes plans for our first carbon capture facility, at Protos in Cheshire, part of HyNet – one of the UK Government's designated Track-1 CCS clusters. We also entered into a strategic partnership to build an Incinerator Bottom Ash (IBA) processing facility in Wellingborough, Northamptonshire, to reprocess residual ash from two of our facilities into aggregate for the construction industry. **Further detail on both facilities is provided within specific case studies in this report.**

For details on the ownership of our plants, please refer to page 93 of this report.



1 DUBLIN IRELAND

Fully operational since 2017

61.5MW	115,000	690,000
power exported	homes powered*	permitted waste capacity (tonnes)

2 ROOKERY SOUTH BEDFORDSHIRE

Fully operational since January 2022

60MW	120,000	657,000
power exported	homes powered*	permitted waste capacity (tonnes)

3 NEWHURST LEICESTERSHIRE

Fully operational since June 2023

40MW	80,000	455,000
power exported	homes powered*	permitted waste capacity (tonnes)

4 PROTOS CHESHIRE

Under construction
Set to be operational in 2025

37.5MW	75,000	500,000
power exported	homes powered*	permitted waste capacity (tonnes)

5 EARLS GATE SCOTLAND

Became operational in March 2024

21.5MW	45,000	274,000
power exported	homes powered*	permitted waste capacity (tonnes)

6 WALSALL WEST MIDLANDS

Under construction
Set to be operational in 2027

44MW	90,000	478,000
power exported	homes powered*	permitted waste capacity (tonnes)

7 WELLINGBOROUGH NORTHAMPTONSHIRE

Became operational in May 2024

Capable of processing up to 200,000 tonnes of IBA per annum

** Based upon UK and Irish regulator data on average household electricity usage.*
All plants are operated by Encyclis, except Earls Gate and Wellingborough.

1.1 ABOUT ENCYCLIS

ONCE ALL OF OUR PLANNED FACILITIES ARE OPERATIONAL, THEY ARE FORECAST TO DELIVER A NUMBER OF BENEFITS TO THE UK AND IRELAND:

OVER **2.9M** TONNES

total residual waste processing capacity per annum

264 MW

of sustainable baseload electricity generated

562,500 HOMES

powered through our electricity per annum

UP TO **350,000** TONNES

of CO_2 to be captured per annum through first carbon capture facility

UP TO **200,000** TONNES

of IBA to be processed per annum at new Wellingborough treatment facility

OUR CONTRIBUTION TO GLOBAL POLICY OUTCOMES

We actively worked within the principles of the **UN Global Compact (UNGC)** in 2023 – a framework that requires businesses worldwide to adopt sustainable and socially responsible policies, and to report on their implementation. We have now begun the application process to become a signatory.

The UNGC asks companies to embrace, support and enact, within their sphere of influence, a set of core values in key areas including human rights, labour standards, the environment, and anti-corruption. These core values make up the Ten Principles of the UNGC.

By signing up to the Ten Principles of the UNGC, we will officially commit to prescribed measurement of our sustainability progress.

1.2 WHY ENERGY FROM WASTE IS ESSENTIAL SOCIAL INFRASTRUCTURE

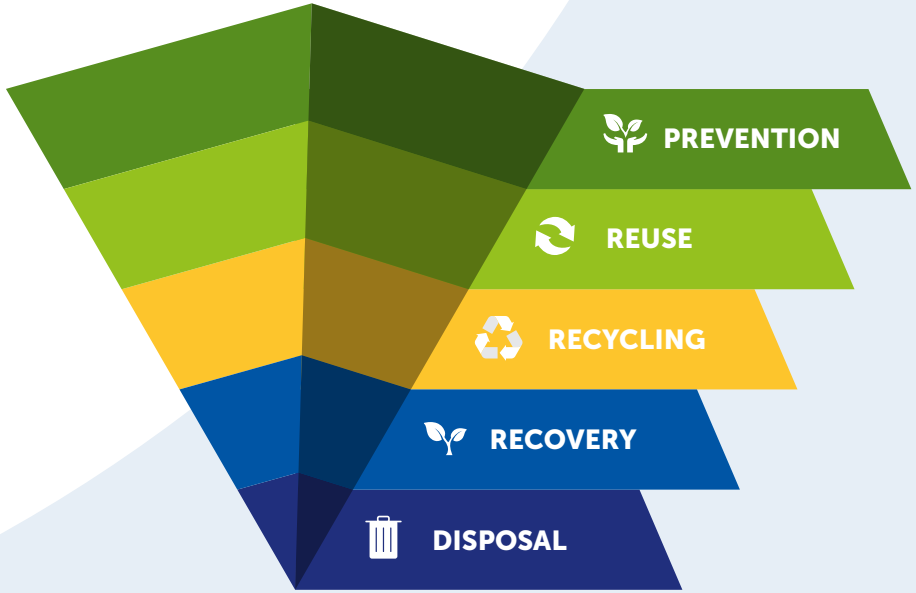
ENERGY FROM WASTE FACILITIES PROVIDE AN ESSENTIAL PUBLIC HYGIENE SERVICE.

They are recognised as the most sustainable solution to managing residual waste that cannot be recycled. Energy from Waste contributes to a sustainable, circular economy, where we keep resources in use as long as possible – as opposed to a linear economy, where we make, use, and dispose. Not only does a circular economy reduce the environmental impacts of energy production and consumption, it puts society in a better position to address resource scarcity issues in the future.

Energy from Waste ultimately recovers millions of tonnes of waste that cannot be recycled or reused away from disposal (landfill) to be safely processed; helping to power and heat homes and industry whilst significantly reducing emissions.[2]

We are also investing in technologies that directly support the transition to net zero, including carbon capture and storage.

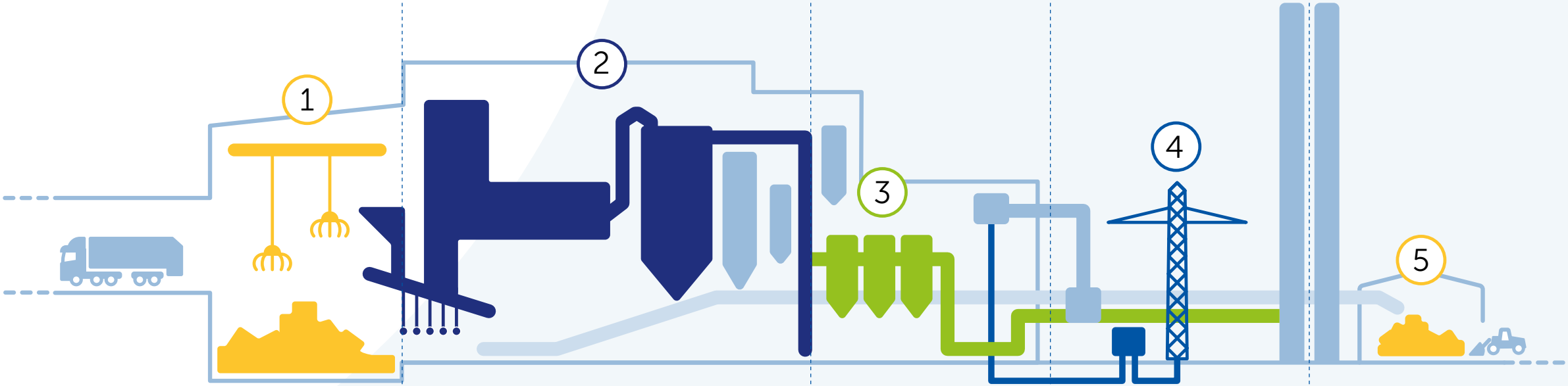
WASTE HIERARCHY



2. ERM Consultancy has independently estimated that Energy from Waste facilities have an emissions footprint that is 41% lower than landfill (2023)

1.2 WHY ENERGY FROM WASTE IS ESSENTIAL SOCIAL INFRASTRUCTURE

HOW ENERGY FROM WASTE WORKS



WASTE DELIVERY AND STORAGE

Residual waste is tipped into a bunker and cranes transfer the waste into a feed hopper for treatment.

COMBUSTION AND BOILER

The waste enters the combustion chamber and is exposed to temperatures of around 850°C on a moving grate. These high temperatures destroy the pathogens within the waste, avoid the formation of dioxins, and ensure complete combustion. This heats boiler tubes that are integrated into the walls of the chamber.

FLUE GAS TREATMENT

Gases from the combustion processes are diverted through filtering and scrubbing systems abating emissions to tightly regulated levels, before being released from the flue stack.

ENERGY RECOVERY

Hot water from the boiler creates high pressure steam which drives a turbine. This creates electricity that is exported to the Grid via a transformer station.

RESIDUE HANDLING AND TREATMENT

The bottom ash that remains after waste combustion, alongside the residues from the air pollution control system, are extracted and taken away for recovery of metals and processing into secondary aggregates.

1.2 WHY ENERGY FROM WASTE IS ESSENTIAL SOCIAL INFRASTRUCTURE

Through our role in minimising the amount of waste that goes to landfill, we provide essential social infrastructure in **four key ways**:

PROVIDING RELIABLE BASELOAD ELECTRICITY AND HEAT TO POWER HOMES AND BUSINESSES	We use residual waste to provide reliable baseload electricity to power new homes and businesses, whilst offering the potential to provide the cornerstone for district heat networks close to our facilities. This reduces the need for imported energy, helps to increase the UK's energy security and – in the case of heat – supports reduced reliance on fossil fuels.
MAXIMISING MATERIAL RECOVERY FROM RESIDUAL WASTE TO SUPPORT THE CIRCULAR ECONOMY	We directly support the circular economy by recovering metals and ash from the UK's residual waste – providing a valuable supply of non-ferrous and ferrous metals, alongside aggregates suitable for use in construction.
PROVIDING LONG-TERM INVESTMENT IN DECARBONISING TECHNOLOGIES	Through our preliminary investment in new technologies for carbon capture and storage and heat networks, we are directly supporting the UK's journey to net zero.
MAXIMISING RECYCLING RATES WITH WASTE SUPPLIERS	Whilst the composition of the residual waste we manage varies (dependent upon the decisions taken by our waste suppliers), we work with our local authorities and their contracted waste collection companies to help ensure the material provided to our facilities cannot be reused or recycled first.

1.3 DETERMINING THE SUSTAINABILITY ISSUES THAT MATTER

The basis of this report is to demonstrate a clear understanding of key sustainability issues – with an emphasis on how external issues affect our business and how our operations affect local communities and the environment.

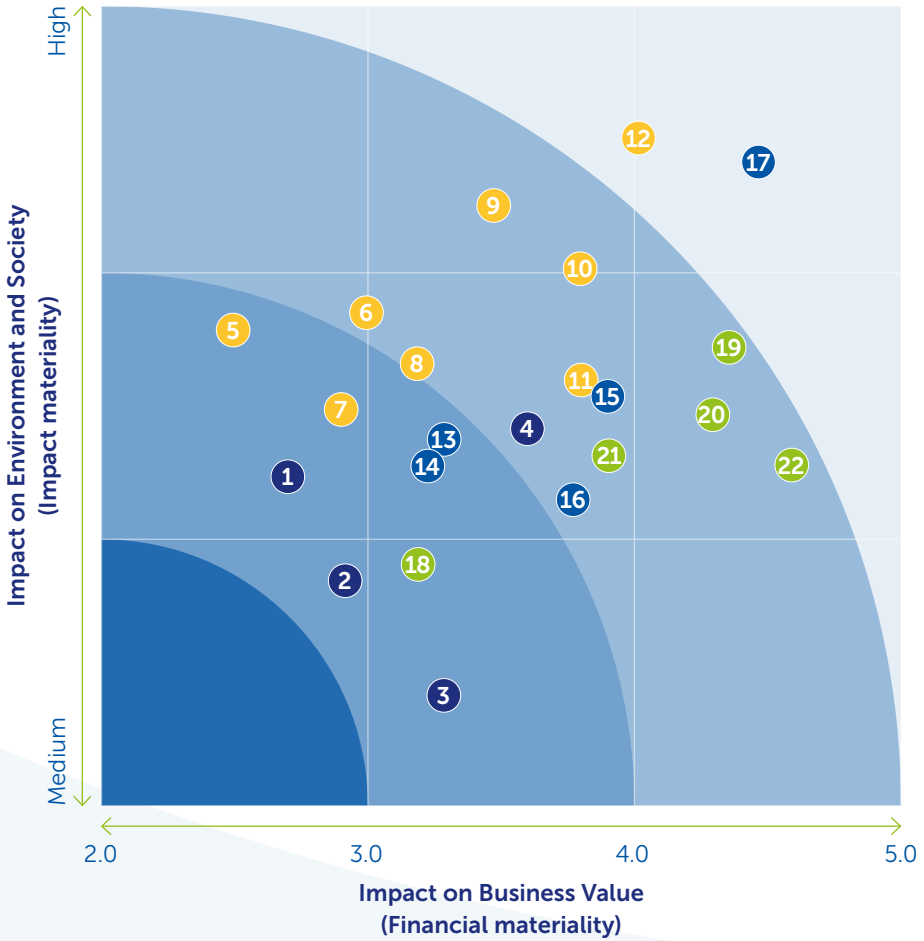
This process, termed a Double Materiality Assessment (DMA), looks at sustainability topics which are material to our business from two perspectives:

1. The impacts of a company's activities on the environment and society; and
2. Sustainability issues that impact on the performance of the company.

Eunomia Research & Consulting Ltd conducted our first DMA in 2022 to assess the sustainability issues that are most important to our business. This assessment model has been retained for this year's report, with a revised DMA to be conducted in 2024.

1.3 DETERMINING THE SUSTAINABILITY ISSUES THAT MATTER

Double Materiality Assessment for Encyclis



IMPACT ON ENVIRONMENT AND SOCIETY

1. Climate change adaptation
2. Transport congestion
3. Odour control
4. Emissions and air quality

BUSINESS MODEL AND INNOVATION

5. Biodiversity and habitat protection
6. Modern Slavery
7. Efficient water use
8. Energy efficiency in business activities
9. Recovering energy from waste
10. Recovery and disposable of APCr (output)
11. Recovery and disposable of IBA (output)
12. GHG emissions

HUMAN CAPITAL

13. Diversity and equal opportunity
14. Living wage
15. Career development and training
16. Community relations and education
17. Health and safety in the workplace

ENVIRONMENT

18. Availability of raw materials
19. Regulatory compliance and policy development
20. Good governance and business ethics
21. Risk management
22. Business model resilience and financial performance

1.3 DETERMINING THE SUSTAINABILITY ISSUES THAT MATTER

We have used the outcome of the DMA to create our key sustainability themes to report against for 2023 – once again split into **ENVIRONMENT**, **SOCIAL** and **GOVERNANCE**.

This is accompanied for the first time by a series of measures by theme to gauge our progress over forthcoming years, shown within **SECTION 7 – MONITORING OUR PERFORMANCE**.

ENVIRONMENTAL

GHG emissions	Climate change is one of the most serious issues facing our world today. We aim to reduce our emissions on the path to deliver net zero.
Climate change adaptation	Although the precise impacts of climate change are unpredictable, we aim to ensure that we are resilient and that our operations and supply chains are robustly procured.
Emissions and air quality	Our facilities operate to the highest environmental standards so that we act as a good neighbour in the areas where we work.
Biodiversity and habitat protection	Biodiversity is essential for health, food security, disease control and livelihoods. Our aim is to protect and enhance biodiversity and habitat protection.
Transport congestion	Vehicle movements are optimised to reduce impacts to communities by specifying the timing and routing of deliveries.
Odour control	Odour is controlled so that it does not negatively impact our communities.
Recovery and disposal of IBA & APCr	We seek to ensure that we are not reliant on landfill for the management of these residues.
Efficient water use	We seek to reduce our consumption of water where possible.
Energy efficiency in business activities	During the processing of non-recyclable waste, some electricity and heat is consumed. It is key that energy efficiency is maximised to mitigate environmental impacts as well as reduce costs.
Recovering energy from waste	Our facilities help to produce baseload electricity. We can also help our local communities reduce their carbon emissions, through the provision of heat to service nearby homes and businesses.

SOCIAL

Health and safety in the workplace	We continually develop and improve our occupational health and safety performance by providing a clear objectives framework, as well as fostering a culture of safety-first approaches.
Career development and training	Skilled, motivated employees are essential to the sustainability and reliability of our services. We provide high quality employment and champion local jobs when possible.
Living wage	We recognise the importance of providing employees with a real living wage.
Diversity and equal opportunity	We believe a diverse and inclusive workforce results in better performance for our organisation.
Community relations and education	Having the support and trust of the local community is very important to us. We are an engaged neighbour and make efforts to maintain strong relationships with our local communities.

GOVERNANCE

Good governance and business ethics	We have developed a structure and management processes to enable our sustainability commitments and responsibilities to be monitored and delivered.
Regulatory compliance and policy development	We ensure that our operations comply with all permits and permissions.
Business model resilience and financial performance	We ensure that the Company is able to deliver its strategy of creating long term sustainable value for all of our stakeholders.
Risk management	We identify, assess, and manage risks and opportunities throughout our business.
Availability of raw materials	We rely on several materials which are essential to the operation of our facilities and monitor the supply chain to ensure procurement resilience.
Modern slavery	Our priority is to prevent modern slavery throughout our organisation and supply chain.

2. KEY SUSTAINABILITY ACHIEVEMENTS IN 2023

2. KEY SUSTAINABILITY ACHIEVEMENTS IN 2023

JANUARY

Construction of Day Aggregates' IBA processing facility in Wellingborough began, with a planned 14-month build time.

Our operations team at Rookery South took part in a charity raffle for the Bedford-based FACES (Family and Children's Early-help Services) charity – raising over £12,000.

MARCH

Protos CCS selected by DESNZ to be part of first phase of the UK's planned carbon capture cluster programme.

MAY

Commissioning of Newhurst ERF completed on 24th May, with the facility becoming operational at month end.

Publication of revised Modern Slavery Statement.

JULY

Completion of Rookery South ISO audit, confirming that the facility achieved triple ISO certification.

AUGUST

Eamon Ryan (Irish Environment Minister) visited our Dublin facility to launch a report recommending action to accelerate the roll-out of district heating schemes.

SEPTEMBER

Managing Director of Operations and key senior managers travelled to each operational site in September to launch and introduce Safety First and the company's six Safety First Rules.

Publication of the company's first Sustainability Review.

Launch of the company's first Electric Vehicle salary sacrifice scheme.

DECEMBER

Submission of planning application for Protos' carbon capture and storage facility, following months of technical work and public consultation.

Senior officials from DESNZ toured our planned carbon capture site at Protos alongside partners from HyNet.

Financial close secured for future Walsall ERF, with initial infrastructure works on 8-acre site commencing.

Completion of Newhurst ISO audit, confirming that the facility achieved triple ISO certification.

3. ENVIRONMENT

Accounting for the outcome of our Double Materiality Assessment, our work on Environment focuses on two main themes:

- Providing our essential public service and generating sustainable baseload electricity in the most efficient way possible, including a commitment to avoid environmental harm in the provision of our services in line with our Environmental Policy Statement; and
- Delivering the three wider environmental objectives as described on Page 7 to show that we provide 'more than energy from waste'.

3.1 MINIMISING EMISSIONS AND BEING EFFICIENT IN OUR OPERATIONS

MINIMISING THE GREENHOUSE GAS (GHG) EMISSIONS WE PRODUCE

Climate change is one of the principal challenges facing the world today. The presence of man-made Greenhouse Gases (GHG) in the atmosphere remains the primary cause of climate change, and tackling it responsibly is a key priority for us.

Sending waste to landfill generates the highest amount of methane and carbon emissions in the waste hierarchy, as well as smaller quantities of other gases[3]. The waste sector was responsible for around 5% of UK GHG emissions in 2022 (with methane accounting for around 90% of these). By comparison, 28% of GHG emissions came from the transport sector, 20% from buildings and products, 14% from industry, 14% from electricity supply, 12% from agriculture and 8% from fuel supply.[4]

This percentage share of the waste sector has reduced over the past two decades, driven by a significant reduction in the amount of waste going to landfill, which directly reduces carbon and methane emissions. A 74% reduction in GHG emissions from the waste sector occurred between 1990 and 2022.[5] Methane generated from landfill in the UK decreased from 3,028 kilotons (kt) in 2015 to 1,716 kt in 2020, the direct result of reductions in the amount of waste landfilled, along with the implementation of methane recovery systems.

Tackling both carbon and methane emissions remains the biggest area for emissions reduction improvement. Methane's inclusion however is important, given it has a global warming potential around 80 times greater than CO_2 over a 20-year period.[6] This means that it is a powerful contributor to global warming in the short term.

By investing in and operating EfW infrastructure, we are helping to lower the UK and Ireland's emissions profiles when compared with methane-emitting landfill. We are also steadfast in supporting the sector's commitment to achieving net zero by 2040, **which means putting in place appropriate emission monitoring and emission reduction plans across our operational portfolio**.

With this in mind, we have calculated the GHG emissions of our operational portfolio for 2023 across **Scopes 1, 2 and 3 in line with GHG Protocol Methodology**, forming a robust basis to assess and tackle emissions across the portfolio. Our 2023 emissions have been calculated by IMS, an independently owned and operated consulting and verification services company specialising in carbon management, reporting and disclosure.

3. 5556-methane-factsheet.pdf (publishing.service.gov.uk)
4. 2022 UK Greenhouse Gas Emissions, Final Figures (publishing.service.gov.uk)
5. 2020 UK Greenhouse Gas Emissions, Final Figures (publishing.service.gov.uk)
6. Methane emissions – European Commission (europa.eu)

3.1 MINIMISING EMISSIONS AND BEING EFFICIENT IN OUR OPERATIONS

The emissions summary across our operational portfolio reflects the consolidation of emissions data according to the Greenhouse Gas Protocol reporting standards, namely the Corporate Accounting and Reporting Standard (2004), and the Corporate Value Chain Accounting and Reporting Standard (2011).

Scope	Description
SCOPE 1	Direct emissions from operations. Over 94% of our emissions are Scope 1, of which over 99% are due to CO_2 being released during the combustion of waste, as measured by our Continuous Emissions Monitoring Systems (CEMS).
SCOPE 2	Indirect emissions from the use of purchased electricity, steam, heating, and cooling. Our Scope 2 emissions are very low as we use the energy produced by our operations to power our facilities, rather than relying on third party sources. The majority of these emissions are from contracted energy at our leasehold London Head Office.
SCOPE 3	Indirect emissions in the value chain, further divided into upstream and downstream emissions as shown below. The GHG Protocol defines 15 categories of scope 3 emissions. 7 were excluded as these sources are identified as not applicable or not significant for the current reporting objectives.

UPSTREAM

- **Goods & Services –** embedded emissions in purchased goods and services.
- **Energy Supply –** embedded emissions in the purchase of fuels and energy in other activity categories.
- **Transport Upstream –** emissions related to the transport of goods upstream of the production process or any transport purchased by the company.
- **Waste –** emissions related to the disposal and processing of waste generated in operations.
- **Business Travel –** emissions related to transportation of employees for business-related activities.

DOWNSTREAM

- **Transport Downstream –** emissions related to the transport of goods downstream of the production process not paid for by the company.

3.1 MINIMISING EMISSIONS AND BEING EFFICIENT IN OUR OPERATIONS

QUANTIFYING OUR EMISSIONS

Our Greenhouse Gas inventory calculated by IMS covers the footprint of our three operational facilities at Dublin, Newhurst and Rookery South, as well as our London headquarters.

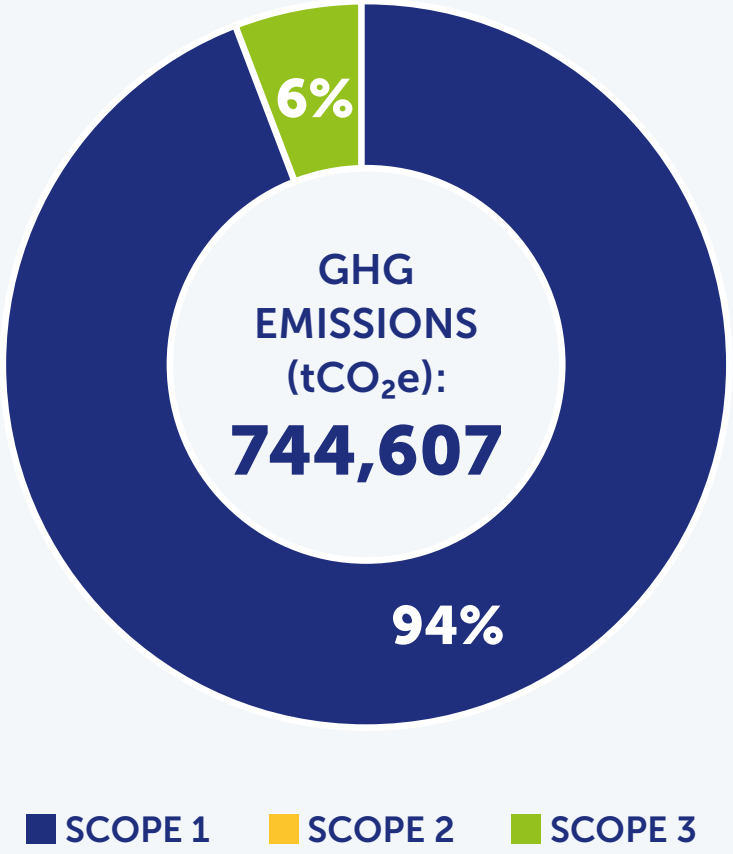
The reported data covers 2023, serving as the baseline for current and future reporting. Whilst we reviewed our GHG emissions in 2022, our 2023 baseline data is more comprehensive and now includes all three of our operational facilities.

All sources of Greenhouse Gas emissions were selected based on their relevance to Encyclis' operations and on their relative size in the total footprint.

Given that our Newhurst facility was only commissioned and handed over to us on 24th May 2023, it should be noted that the Greenhouse Gas emissions included here for Newhurst are from handover onwards.

In 2023, our total emissions were **744,607 tCO_2e**.

Note: *Following the GHG accounting and reporting protocol, totals exclude emissions from Biogenic CO_2. Total emissions for Encyclis 2023: 1,573,306 (tCO_2e) including Biogenic.*



OUR TOTAL GHG EMISSIONS BY SITE ARE AS FOLLOWS:

Encyclis GHG Emissions (Dublin, Newhurst, Rookery and Corporate London HQ**)	2023		Dublin	Newhurst*	Rookery
	2023		2023		
Emissions Category	**GHG Emissions (tCO_2e)**	**Percentage split by Scope (%)**	**GHG Emissions (tCO_2e)**		
Scope 1 (excluding biogenic CO_2)	699,542	94%	311,975	116,044	271,523
Scope 2	5	0%	0	0	0
Scope 3	45,060	6%	16,924	4,155	23,255
Total (excluding biogenic CO_2)	**744,607**	**100%**	**328,899**	**120,199**	**294,778**
Total waste processed (t)	**1,417,061**		**609,945**	**217,184**	**589,932**
Total Carbon Intensity (excluding biogenic)	**0.52**		**0.54**	**0.55**	**0.50**

Newhurst operational reporting period June to December 2023, reflecting takeover after commissioning.

*** GHG emissions from London HQ are negligible compared to our operational sites – Scope 2: 5 tCO_2e , Scope 3: 726 tCO_2e, Total: 731 tCO_2e*

3.1 MINIMISING EMISSIONS AND BEING EFFICIENT IN OUR OPERATIONS

CARBON INTENSITY

Although we processed different volumes of waste at each plant in 2023, the carbon intensity calculation is comparable across our three operational sites. The carbon intensity calculation uses the total GHG emissions per site (excluding biogenic CO_2) and the total waste processed per site. This will continue to be reported on an annual basis.

WHY ARE OUR SCOPE 2 EMISSIONS SO LOW?

Under the GHG Protocol, there are two distinct methods for Scope 2 accounting, each with a list of appropriate emission factors:

- A location-based method reflects the average emissions intensity of grids on which energy consumption occurs (using mostly grid-average emission factor data); and
- A market-based method reflects emissions from electricity that companies have purposefully chosen (or their lack of choice).

We completed 'dual reporting' (both location-based and market-based emissions reporting) which the GHG Protocol endorses as best practice.

We procure 100% renewable energy at our operational sites. At our London Head Office however, the leasehold contract does not specify the type of electricity imported; the UK market average has therefore been used for Scope 2.

WHERE DO OUR SCOPE 3 EMISSIONS COME FROM?

Most of our Scope 3 emissions are associated with purchased goods and services, within which pollution control materials such as activated carbon, lime, sodium hydroxide, and ammonia represent the main GHG output.

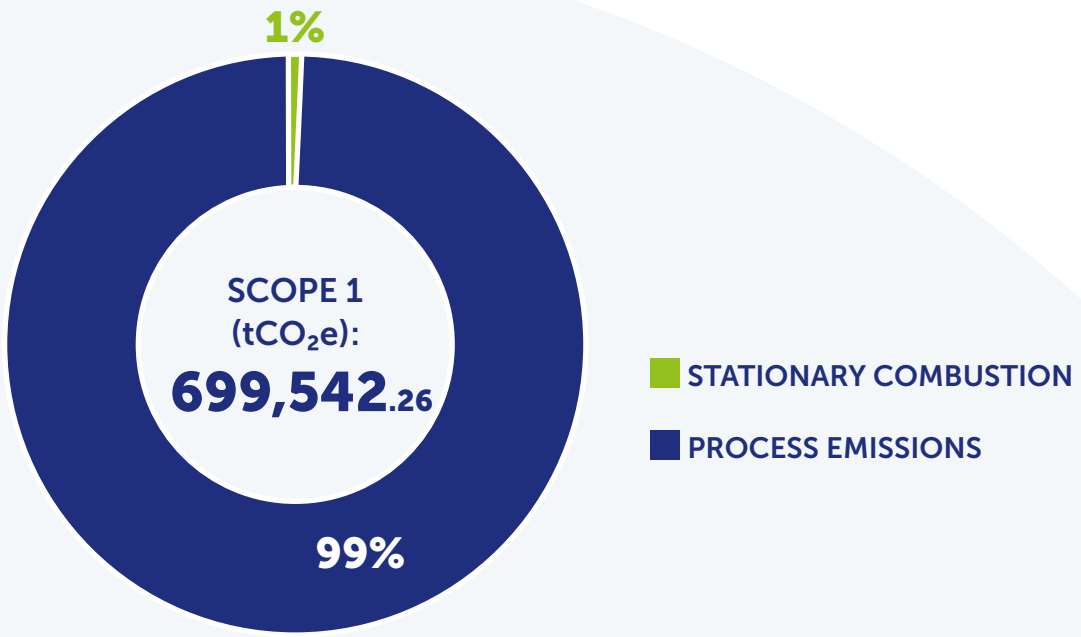
Emissions associated with inbound transport of waste and outbound transport of waste products, including Waste Generated in Operations such as incinerator bottom ash (IBA) and air pollution control residues (APCr), also contribute to our Scope 3 emissions.

Now that we have an accurate baseline for our Scope 3 emissions, we have begun the process of identifying opportunities to reduce these emissions.

3.1 MINIMISING EMISSIONS AND BEING EFFICIENT IN OUR OPERATIONS

WHERE DO OUR SCOPE 1 EMISSIONS COME FROM?

Our Scope 1 emissions, direct emissions from operations controlled by Encyclis, represent **94%** of the company's total emissions. As demonstrated by the diagram below, **99%** of our Scope 1 emissions are **Process emissions** – the release of greenhouse gases from our waste treatment processes.



Tackling process emissions is therefore our overriding priority in making a real step change in our carbon emissions. This underpins our decision to be at the forefront of efforts to invest in the installation of carbon capture and storage (CCS) technology, which we believe is critical to decarbonising the waste management sector and wider UK industry.

Our Scope 1 emissions also consist of:

- **Stationary combustion**
  Emissions resulting from combustion of fuels in stationary sources.
- **Fugitive emissions**
  Emissions resulting from the leakage of refrigerants or the direct release of greenhouse gases.
- **Mobile combustion**
  Emissions resulting from the combustion of fuels in company owned or controlled mobile combustion sources.

3.1 MINIMISING EMISSIONS AND BEING EFFICIENT IN OUR OPERATIONS

DEVELOPING AND IMPLEMENTING CARBON CAPTURE

WHY CARBON CAPTURE MATTERS IN MINIMISING EMISSIONS

Carbon Capture and Storage (CCS) technology is designed to prevent the release of CO_2 from industrial processes. Its role in reducing the carbon intensity of the power sector (including Energy from Waste) is a crucial element in the UK achieving its net zero goals.

The Climate Change Committee recognises CCS as an essential component of the effort to reach net zero. Deployment of CCS at scale in the UK is necessary for the sixth Carbon Budget, and the wider statutory requirement to deliver net zero by 2050. This view is shared by the International Energy Agency, which has stressed that 'carbon capture technologies play an important role in supporting modern and flexible power systems'.[7]

Based on current technology, CCS is the only potentially available route to achieving net zero for the Energy from Waste industry in the UK. The waste management sector is leading the way on commercial scale deployment, and our work with the UK Government to deliver this at Protos is critical for the decarbonisation of UK industry.

> The IEA Sustainable Development Scenario outlines a major transformation of the global energy system, showing how the world can deliver the three main energy-related Sustainable Development Goals simultaneously. Under this scenario, carbon capture technologies play an important role in providing dispatchable, low-carbon electricity - with plants with these technologies forecast to generate 5% of global power by 2040.

7. Taken from Why carbon capture technologies are important – The role of CCS in low-carbon power systems – Analysis – IEA

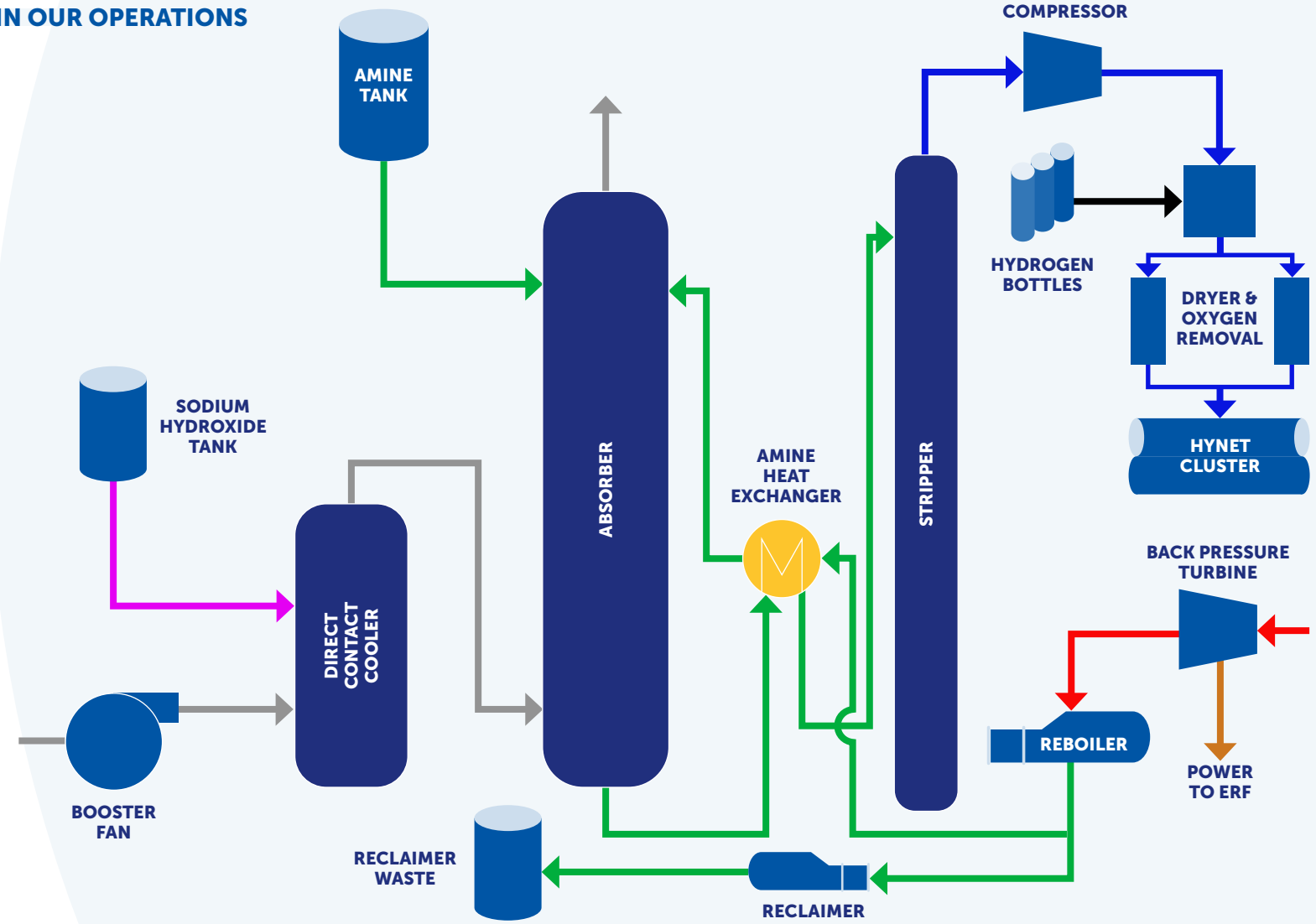
3.1 MINIMISING EMISSIONS AND BEING EFFICIENT IN OUR OPERATIONS

HOW CARBON CAPTURE WORKS

Carbon capture technology for Energy from Waste facilities involves separating CO_2 from the flue gas released during the combustion and treatment of waste, so it can be used in industrial processes or safely stored underground.

In the case of our planned carbon capture facility at Protos (shown in our case study on page 40), the flue gas is carried from the ERF to the carbon capture facility via above-ground ducts and booster fans. It is then cooled in direct contact coolers (DCCs) for the CO_2 to be absorbed in absorber columns by an amine solution (MEA). With the CO_2 removed from the flue gas stream, the flue gas will be released into the atmosphere.

The captured CO_2 will be removed from the amine solution in de-absorber towers by reheating the amine solution with steam. The captured CO_2 is then compressed and the moisture removed, to allow for onward transport of the CO_2 for storage. The amine solution is subsequently reclaimed and reused in a closed loop cycle.



- Sodium Hydroxide (NaOH)
- Flue Gas (from ERF to CCS Plant)
- Amine Solvent (rich & lean)
- Capture CO_2
- Steam
- Condensate

3.1 MINIMISING EMISSIONS AND BEING EFFICIENT IN OUR OPERATIONS

HOW WE WILL IMPLEMENT CARBON CAPTURE ACROSS OUR PORTFOLIO

Our programme to integrate carbon capture technology has begun with our planned CCS facility at Protos in Cheshire, part of the HyNet programme – one of the UK's leading industrial decarbonisation projects. HyNet aims to reduce the amount of CO_2 emitted across the North West of England and North Wales by a quarter, starting in the mid-2020s. Full details are provided in the case study on page 40.

We are playing a leading role in working with the UK Government on the commercial scale deployment of this technology. Following the UK Government's selection of the HyNet industrial decarbonisation project as a Track 1 CCS cluster, Protos CCS was shortlisted in 2023 as one of the first HyNet projects to proceed to negotiations for risk-sharing and subsidy support under the UK Government's industrial carbon capture business model.

We are working closely with officials from the Department of Energy Security & Net Zero (DESNZ) to determine the commercial and technical details of the project and to agree funding from the UK Government's £20 billion commitment to support the early deployment of carbon capture projects. Subject to the agreement of UK Government support for the project as one of the two lead project emitters within the cluster, construction of the facility would begin in 2025, with the aim of being operational in 2028 – creating a clear proof point for ourselves, the Energy from Waste sector, and wider industry to learn from.

In order to reach net zero emissions, CCS technology will need to capture at least 50% of the CO_2 emitted across our portfolio. This is due to the average composition of the residual waste that we process being 50% biogenic (e.g. biowaste, paper and cardboard) and 50% anthropogenic (fossil based, e.g. plastics).[8]

WHAT IS BIOGENIC CO_2?

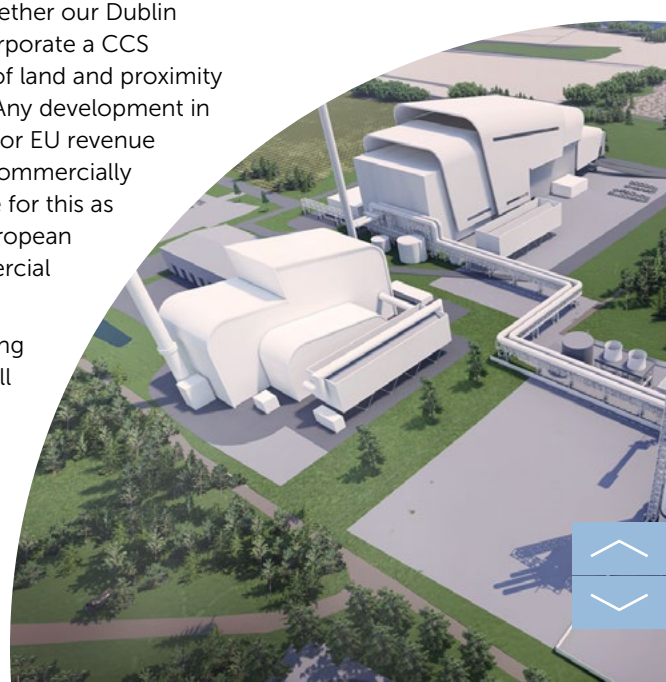
In the natural carbon cycle, plants remove and store CO_2 from the atmosphere through the process of photosynthesis. Approximately 50% of residual waste in the UK will have come from biological sources originally, including wood, biowaste and food. This means that when we incinerate biogenic residual waste at one of our ERFs, biogenic CO_2 is released back into the atmosphere as it would have been in the natural carbon cycle. As this carbon would have been released anyway, the biogenic CO_2 that we emit does not contribute to our total GHG emissions, in accordance with the GHG accounting and reporting protocol.

Fitting CCS at an ERF takes this one stage further, as the biogenic carbon contained within the organic matter is captured and stored, enabling negative emissions.

Beyond Protos, we are actively considering where future facilities could be located across our portfolio. Rookery South is one potential site for the development of CCS as our longest established operation within the UK. Rookery South has the benefit of being located adjacent to the National Infrastructure Commission's initial proposed route for a core nationwide CO_2 pipeline network, which will enable the acceleration of carbon capture in Great Britain. We intend to install a CCS pilot plant at Rookery South in conjunction with Hitachi Zosen Inova (HZI) in 2024, to gain valuable experience, and to test different amine-based solvents.

We are also actively considering whether our Dublin Waste-to-Energy facility could incorporate a CCS development, given the availability of land and proximity to storage facilities in the Irish Sea. Any development in Dublin however will require an Irish or EU revenue support mechanism to make CCS commercially viable. We will continue to advocate for this as a member of the CCSA, the lead European association accelerating the commercial deployment of CCS.

Our eventual goal remains developing CCS facilities to capture carbon at all of our operational plants.



8. Pursuant to the GHG accounting and reporting protocol within the Corporate Accounting and Reporting Standard (2004) and the Corporate Value Chain Accounting and Reporting Standard (2011), our total carbon emissions exclude emissions from biogenic CO_2

3.2 SUPPORTING THE CIRCULAR ECONOMY

Our commitment to supporting the circular economy is underpinned by three principal strategic activities: supporting the emergence of district heating across the UK and Ireland with our waste heat providing an anchor heat load; recovering metals and ash from the UK's non-recyclable waste to reduce the use of primary materials; and engaging with our supply chain to promote waste reduction, reuse and recycling, including plastics removal.

SUPPORTING DISTRICT HEATING

Harnessing Energy from Waste as a heat source within local heat networks can deliver decarbonisation for local communities close to our facilities and could help the UK and Irish governments with their low-carbon heating ambitions.

The heat generated within our facilities can be captured and distributed as an anchor heat load through a below-ground, thermally efficient district heating network to local homes and businesses – reducing its cost and significantly improving its viability.

The UK Government's ambition for district heating is demonstrated by the Energy Act (2023) which provides the powers for heat network zoning to be implemented in England in geographical areas where heat networks are expected to be the lowest-cost solution to decarbonising heat. In the Climate Change Committee's Net Zero scenario, 20% of the UK's heat market will be delivered via heat networks by 2050.

The Irish Government has laid out similar ambitions in its 2023 Climate Action Plan, and states that district heating could supply up to 2.7TWhr by 2030 (approximately 10% of Ireland's heating needs). **We are determined to support both Governments in meeting these aims.**

3.2 SUPPORTING THE CIRCULAR ECONOMY

HOW WE ARE SUPPORTING DISTRICT HEATING PROJECTS ACROSS OUR PORTFOLIO

We developed plans with local authorities and partner companies in 2023 to integrate our plants with planned local heat networks.

At Rookery South ERF we have partnered with Vital Energi, a specialist company that installs and operates large-scale, centralised, clean energy centres for the commercial and public sectors. Heat from the ERF will be used to supply a range of customers with low carbon heating and hot water.

We have already received Green Heat Network Funding from the UK Government for district heating development at Rookery South. Vital Energi is working up a planning application for the energy centre and pipeline to facilitate district heating from Rookery South ERF. The application is likely to be submitted to Central Bedfordshire Council as the Local Planning Authority in the second half of 2024.

Vital Energi has also been selected to be our heat network partner at Newhurst ERF. Whilst Newhurst only became operational in 2023, a heat network survey has already been carried out alongside the submission of an application for Green Heat Network funding to continue development work.

At our Dublin Waste to Energy facility, Dublin City Council is the development partner leading on heat network development. Our facility has been equipped with heat exchangers and is ready for integration with district heating as it develops.

In addition to developing heat networks at our existing sites, our planned ERF at Walsall will also be built with district heating capability. This is also the case at Earls Gate; whilst the facility was in the construction and commissioning phase in 2023, it has already begun heat export to customers via the existing heat network of our client Calachem.

THE INTERFACE BETWEEN CARBON CAPTURE AND DISTRICT HEATING

Given our work bringing forward carbon capture and district heating in parallel, we are commissioning a study by Fichtner Consulting Engineers in 2024 to fully understand the interface between the two. It is essential for us to know that once CCS has been developed at our sites, we can maintain the volume and quality of heat provided to any local district heating network.

3.2 SUPPORTING THE CIRCULAR ECONOMY

RECOVERING MATERIALS FOR REUSE

IBA AND APCr

The primary purpose of our facilities is to combust residual waste in the most efficient way possible. This includes how we treat residues from this treatment process: Incinerator Bottom Ash (**IBA**) and Air Pollution Control residues (**APCr**). IBA is our largest source of residual material, and is composed of the ash formed after the combustion of residual waste. It also contains metals that can be extracted for reprocessing and recycling. APCr is produced from cleaning the flue gases following the combustion process.

We have a clear goal in place for material recovery – **that 100% of IBA and APCr from our operations is recovered by 2030, ensuring that none of this material ends up in landfill**. This is achievable through subsequent treatment, with:

- metals being recovered from IBA, with the remainder (including concrete, ceramic, glass and brick) being turned into aggregates for use in construction; and
- APCr being transformed into a secondary aggregate known as Manufactured LimeStone (M-LS), which can be utilised to manufacture concrete blocks.

By providing a new future for this waste, we provide valuable metals and minerals for recycling – translating to the replacement of primary raw materials, while eliminating the GHG emissions associated with extraction.

THE PROCESSING OF IBA AND APCr IN THE UK AND IRELAND IN 2023

IBA

In 2023, IBA from our Rookery South ERF facility and from Newhurst ERF was fully processed and completely recycled.

We have also invested in our own IBA processing facility in Wellingborough, Northamptonshire, to provide a stable and reliable treatment solution in partnership with Day Aggregates. From 2024, Wellingborough will take IBA from Rookery and Newhurst for recycling into aggregates for the construction industry. A full case study is provided on page 42.

We operate in a more challenging regulatory environment in Ireland for recycling and recovery of residues. Currently, there are no IBA or APCr processing facilities in Ireland, with residue from Dublin having to be treated for recovery in the Netherlands in 2023.

To address this issue, we are now treating the Dublin IBA in Ireland via an interim solution, before our long term solution is in place in 2025.

We are continuing to work with the Irish Government and the EPA (Environmental Protection Agency) and partners to establish a more sustainable solution for the recovery of both IBA and APCr in Ireland, on which we will provide further detail in our 2024 report.

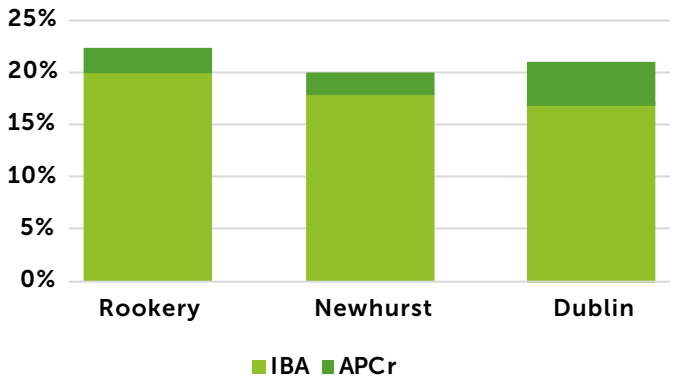
APCr

At Newhurst, we have established a partnership with O.C.O Technology to use their Accelerated Carbonation Technology. This recycles APCr waste into a secondary aggregate known as Manufactured LimeStone (M-LS), which can be utilised to manufacture concrete blocks. Further detail is provided within the case study on page 44.

APCr from Rookery South is currently treated chemically prior to recovery processing at a permitted facility. Longer-term, we will look to establish a similar partnership to the one at Newhurst in order to meet our 2030 goal.

In 2023, APCr from Dublin was treated in Norway. We are currently looking at alternatives to this arrangement to provide a more sustainable solution.

IBA and APCr as % of waste processed 2023



3.2 SUPPORTING THE CIRCULAR ECONOMY

THE RECOVERY OF METALS FROM IBA FOR RECYCLING AND REUSE

We also continue to extract both ferrous and non-ferrous metals from the IBA produced at both our Rookery South and Newhurst ERFs.

Magnets are used to separate out the ferrous metals from the IBA, prior to them being sent for recycling. Non-ferrous metals are also separated out using Eddy currents and recycled. Ultimately, metals recovered from our Energy from Waste facilities are used for a wide variety of industrial purposes.

INFLUENCING THE INCREASE OF RECYCLING RATES: REDUCING PLASTICS CONTENTS IN THE WASTE STREAM

Although our facilities only process residual waste, defined as non-hazardous, solid, combustible mixed waste which remains after recycling activities, we have an important role to play in supporting waste reduction, reuse, and recycling as part of the wider waste management value chain.

We do this in our role as policy influencers, through a number of trade bodies (as reflected on page 74) that advocate recycling reforms, as well as by working directly with our waste suppliers on the composition of the waste delivered to our plants – as the following case study on Dublin shows.

Photo on right: In August 2023, Kieran Mullins, Project Director for Dublin WtE, explains to Eamon Ryan, Ireland's Environment Minister, about the decarbonisation work that Dublin WtE is bringing forward in partnership with suppliers and the local council.

CASE STUDY

DUBLIN
INFLUENCING RECYCLING RATES: WORKING TOGETHER TO REDUCE PLASTICS IN THE RESIDUAL WASTE STREAM

Our Dublin Waste-to-Energy Facility is a residual waste treatment facility, where the waste delivered to the facility must be derived from source-segregated collection systems. That means that the waste collectors must operate a three-bin collection system for compostable waste, mixed dry recyclable waste, and residual non-recyclable waste.

Prior to delivery from the waste collectors, facilities and operations are inspected to ensure compliance with the three-bin system requirement and that the waste they deliver does not have source segregated material in the loads. As a result, the waste collectors are capturing clean plastics (soft and hard) in the mixed dry recyclable bins which can be sent for recycling.

To support this work, staff from the facility have been working with several waste collectors to remove plastic from their residual waste stream, which in turn reduces the calorific value of the waste delivered to the plant. Whilst several waste collectors were initially reluctant to carry out this operation, they now see the removal of plastics as a business opportunity. The residual waste is screened to remove the finer fractions and is then sent across an air blower, where the light plastic waste is recovered and can be sent to cement kilns as a substitute fuel, or to recycling facilities.

This has led to an increase in plastic waste recovered nationally and has also helped to reduce the calorific value of the waste delivered to our Dublin facility – enabling more non-recyclable waste to be treated.

3.3 CLIMATE CHANGE ADAPTATION

2023 was the hottest year on average across the globe since records began. A changing climate means that extreme weather incidents are becoming more common and more severe. This could have a direct impact on our business, on our supply chains, and on our consumers and markets.

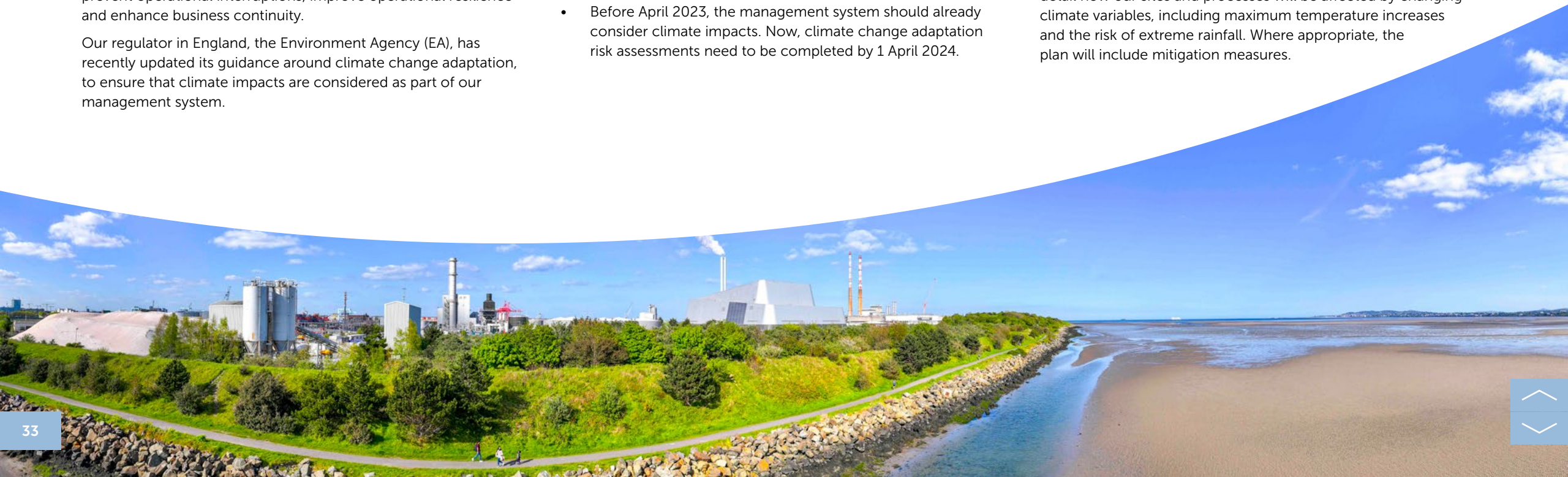
Our facilities are in regions that are less likely than others globally to be severely impacted by climate change in the short term. It is still crucial however that we plan for extreme weather events to prevent operational interruptions, improve operational resilience and enhance business continuity.

Our regulator in England, the Environment Agency (EA), has recently updated its guidance around climate change adaptation, to ensure that climate impacts are considered as part of our management system.

For permits issued by the EA:

- On or after 1 April 2023, climate change adaptation planning needs to be integrated into the management system.
- Before April 2023, the management system should already consider climate impacts. Now, climate change adaptation risk assessments need to be completed by 1 April 2024.

As a result of the EA's updated requirements, we plan to complete a Climate Change Adaptation risk assessment and action plan for all of our operational facilities in 2024. The risk assessment will detail how our sites and processes will be affected by changing climate variables, including maximum temperature increases and the risk of extreme rainfall. Where appropriate, the plan will include mitigation measures.



3.4 BEING A GOOD NEIGHBOUR IN THE COMMUNITIES WE OPERATE

MANAGING AIR QUALITY

Whilst modern, well-managed Energy from Waste facilities have been found by regulators to make only a small contribution to local concentrations of air pollutants, air quality considerations are amongst the most common public questions received. We are therefore focused on working within strict environmental limits across all facilities to remain a good neighbour to our local communities.

All of our facilities must comply with a restrictive Environmental Permit regulated by the Environmental Agency (EA), and the Environmental Protection Agency in Ireland (EPA). This Permit provides Emission Limit Values (ELVs) for different substances that we emit, and states the different monitoring regimes for each substance. These requirements are in line with the EU's Industrial Emissions Directive (IED).

Our facilities are equipped with the latest continuous emissions monitoring systems which monitor emissions to ensure compliance with relevant standards.

As specified within our permits, other emissions (including mercury and dioxins) are monitored on a quarterly or six-monthly basis. This testing is undertaken by an independent third-party organisation certified by the EA. All emissions data and other exchanges of information are regularly submitted to the EA (in the UK) and EPA (in Ireland) for assessment.

A significant change to the ERF industry came in December 2023, with the implementation of revised Environmental Permits for all ERFs in the UK and across Europe. The revised permits were issued in England by the EA, and encompassed the changes required from the Europe-wide Best Available Techniques Reference Document (BREF) review on waste treatment.

In many cases these conclusions should improve the environmental performance of each ERF, for example by lowering the achievable emission level associated with the application of the Best Available Techniques (BAT-AEL).

As we own and operate a modern fleet of facilities, we believe that we already meet the performance requirements of the BAT conclusions, and have been working closely with the EA to demonstrate this through:

- Further NOx reduction trials beyond the requirement of new permit reductions;
- Continuous monitoring of mercury or proof of low and stable operation;
- Continuous monitoring of dioxins or proof of low and stable operation; and
- Gross electrical efficiency compliance.

3.4 BEING A GOOD NEIGHBOUR IN THE COMMUNITIES WE OPERATE

KEY AIR QUALITY PARAMETERS

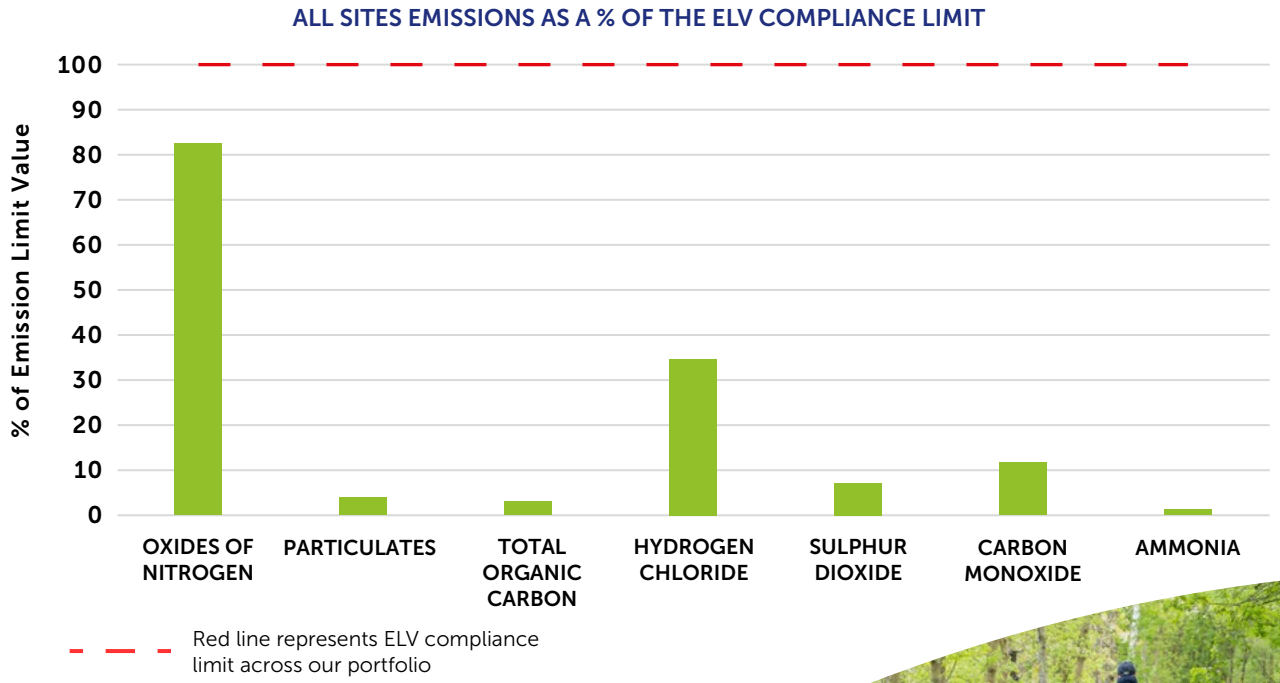
PARAMETER	CURRENT ELV	ELV FROM 1/12/23	Reference period	Frequency
Particulate matter (PM)	30 mg/m³		½ hr average	Continuous
	10 mg/m³	**5 mg/m³**	Daily average	Continuous
Total Organic Carbon (TOC)	20 mg/m³		½ hr average	Continuous
	10 mg/m³		Daily average	Continuous
Hydrogen Chloride (HCl)	60 mg/m³		½ hr average	Continuous
	10 mg/m³	**8 mg/m³**	Daily average	Continuous
Carbon Monoxide (CO)	150 mg/m³		95% 10 min average	Continuous
	50 mg/m³		Daily average	Continuous
Sulphur Dioxide (SO2)	200 mg/m³		½ hr average	Continuous
	50 mg/m³	**40 mg/m³**	Daily average	Continuous
Oxides of Nitrogen (NOx)	400 mg/m³		½ hr average	Continuous
	200 mg /m³	**180 mg/m³**	Daily average	Continuous
Ammonia (NH3)	-	**15 mg/m³**	Daily average	Continuous
Hydrogen Fluoride (HF)	2 mg/m³	1 mg/m³		Bi-annual
Cadmium & Thallium (Cd, Tl)	0.05 mg/m³	0.02 mg/m³		Bi-annual
Mercury (Hg)	0.05 mg/m³	0.02 mg/m³		Bi-annual
Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V	0.5 mg/m³	0.3 mg/m³		Bi-annual
Dioxins & Furans	0.1 ng/m³	0.06 ng/m³		Bi-annual

Note *Dublin ERF new BREF limits applied from the 12th of November 2023.*

3.4 BEING A GOOD NEIGHBOUR IN THE COMMUNITIES WE OPERATE

The graph below summarises the air quality emissions from our operational facilities in 2023, represented as the 'percentage below the Emission Limit Value of the daily average'. Our 2023 performance reflects our emissions consistently remaining well below required limits across all of our portfolio.

Emissions data for each of our operational facilities can be found in **Section 7**.



Note *Emissions reported for Newhurst in 2023 only includes the period after commissioning. Commissioning was completed on 24 May 2023, hence data reflects the period 24 May 2023 to 31 December 2023*

ODOUR CONTROL

The main potential source of odour emissions at EfW facilities are waste storage bunkers. We have invested in negative pressure storage bunkers for our facilities, in line with BAT, to ensure this air is used in the combustion chamber as a primary air feed. This is monitored and controlled in line with each of our permits, thereby minimising odour impacts on local communities.

Throughout 2023, any potential emissions of odour and dust from our tipping halls and refuse bunkers across all three facilities were controlled by forced draught fans located above the refuse bunkers. These draw air from the bunker hall and reception area into the furnace to feed the combustion process, creating negative pressure and ensuring odours are kept to a minimum.

3.4 BEING A GOOD NEIGHBOUR IN THE COMMUNITIES WE OPERATE

OTHER KEY CONSIDERATIONS

EFFICIENT WATER USE

Energy from Waste facilities consume water, which is supplied to sites by the assigned water company in the area. Our sites normally have a process water tank filled directly from a town water supply, which then supplies water consuming processes within the plant. Most of the water is transformed into steam to power the turbine that generates electricity.

We seek to minimise water consumption. The design of our facilities and our approach to continual operational improvement minimise the amount of town water we consume on an annual basis.

All of Energy from Waste facilities have been designed to achieve zero discharge of water within processes where the water can be reused. For example, any water discharged from a process such as boiler blowdown will be collected in a tank for reuse in the bottom ash extractor.

This has been matched with specific scheme installations at each of our operational facilities:

FACILITY	WATER EFFICIENCY INSTALLATION
Rookery	Our Rookery facility has a rainwater harvesting system on site. The harvested rainwater is used to irrigate the living wall – with 382,288 litres of harvested rainwater being reused in 2023.
Newhurst	Rainwater from the roof at Newhurst is collected for use as grey water for toilet flushing.
Dublin	At our Dublin facility, grey water (wastewater from non-toilet plumbing systems) from a nearby waste water treatment plant is collected and used, along with rain water, to ensure the plant is as water efficient as possible.

2023 was our baseline year for collecting water usage statistics across our fleet. Our town water usage across the portfolio in 2023 was as follows:

FACILITY	2023 WATER USAGE
Dublin	252,382m^3
Newhurst	16,685m^3
Rookery	73,882m^3
TOTAL	353,207m^3

Our Dublin facility is responsible for a large proportion of our total water use. This is due to the use of a site-specific flue gas treatment that includes a scrubber, in line with the operational requirements of the facility.

We will continue to develop our approaches to waste water recycling and minimising towns water usage across all three operational facilities, and to design in effective water harvesting in all of our future Energy from Waste facilities.

ENCOURAGING BIODIVERSITY

Biodiversity is essential for health, food security, disease control, and livelihoods. It also offers protection from environmental and ecological disasters.

Our Sustainability Committee ensures that biodiversity and nature are safeguarded and pollution is minimised during construction and operations, in compliance with Environment Agency requirements and our Environmental Policy Statement. We are supportive of the Biodiversity Best Practice Guide developed by the Environmental Services Association, and actively seek to ensure implementation of the guidance within our operations.

As in 2022, we continue to contribute to biodiversity protection by increasing landfill diversion, helping to reduce harmful impacts on local habitats. At Rookery South ERF, we are continuing to work with the Forest of Marston Vale Community Forest Trust to support new tree-planting and rewilding in the area surrounding the site, and maintain a green wall and brown roof (as shown in the case study). This is supported by an Ecological Management Scheme for the wider site.

CASE STUDY

ROOKERY SOUTH GREEN WALL AND BROWN ROOF

We have installed a green wall at Rookery South to support biodiversity and help to integrate the ERF building into the local landscape, particularly from the west in the direction of the Forest of Marston Vale Forest Centre and Country Park.

The planting strategy for the green wall was informed by a number of factors: aesthetic requirement, aspect, location, exposure and maintenance. The wall is watered with rainwater harvested from the building. The wall also incorporates nesting boxes for bird and bat species.

The brown roof provides an ecological habitat creation opportunity, and was carefully selected to recreate the low nutrient conditions formerly offered by the bare ground habitats on the western slope of Rookery Pit.

SUPPORTING A WIDER RANGE OF ECOLOGICAL HABITATS

We have developed an Ecological Management Scheme (EMS) at Rookery South to mitigate the impact of development and to provide clear ecological enhancement measures. It has three specific purposes:

- to identify any changes to levels of bat activity;
- to identify areas of New Zealand Pygmyweed, an invasive species that requires removal; and
- to establish a brown roof at the ERF, as well as vegetation around the site's attenuation pond and ponds around the former Rookery North Pit to increase the range of species that can be found on site.

We undertook a field survey in 2023 to see how well this Ecological Management Scheme was working in practice. The survey found:

- at least seven species of bat, with a continued presence of species which tend to be sensitive to artificial light. There were over 3,000 passes caught during the survey, which concluded that the works to date have not had a detrimental effect on the diversity of the bat community in the immediate vicinity of the site.
- no evidence of New Zealand Pygmyweed in the ditches to the east and south of the ERF. There are however extensive sections on the western and northern banks of the attenuation pond, which will be removed in 2024.

In 2023 a total of 37 species of invertebrate were identified across the site – representing a significant increase since 2022 when 16 were identified. This is principally due to an increase in aquatic submerged vegetation in the attenuation pond (now up to 90%, well in excess of the EMS target of 40% cover); the establishment of the brown roof in supporting low-lying vegetation with good invertebrate diversity; and the achievement of 15% open mosaic grassland cover.

3.4 BEING A GOOD NEIGHBOUR IN THE COMMUNITIES WE OPERATE

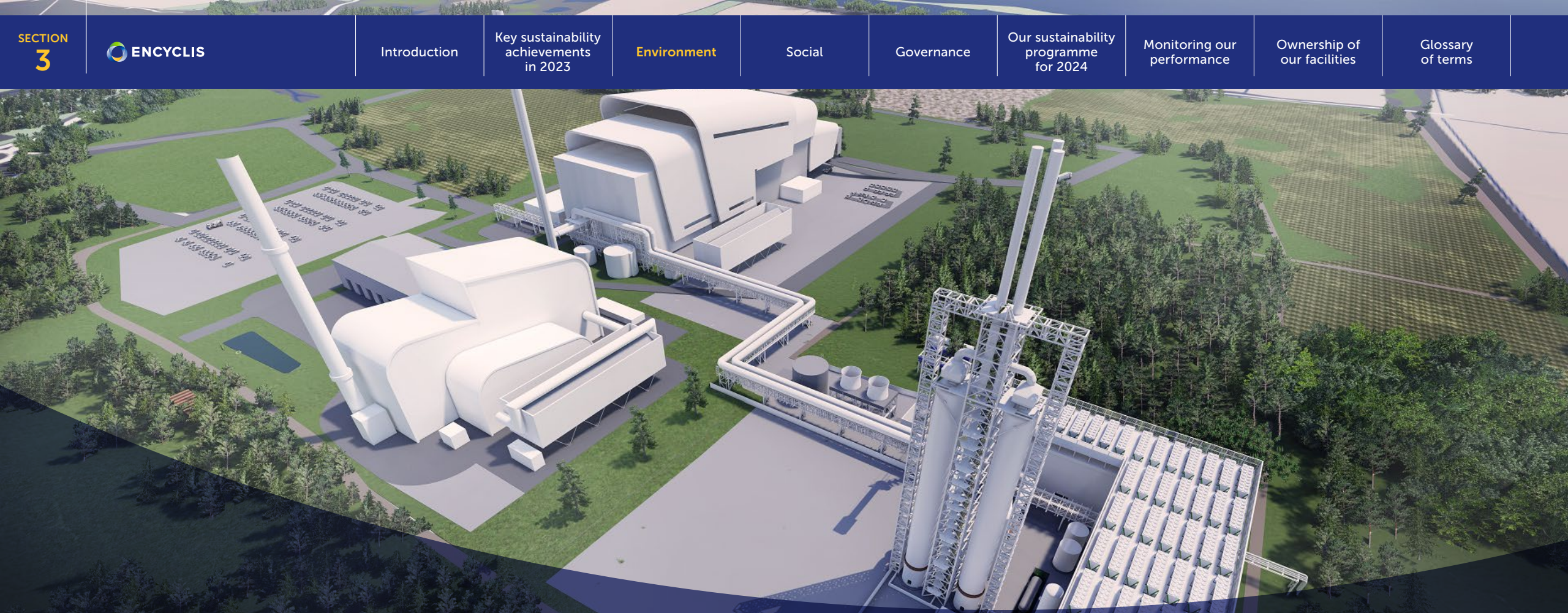
TRANSPORT PLANNING & TRAFFIC MANAGEMENT

Another key consideration in being a good local neighbour in the areas we work is transport planning and traffic management – minimising disruption by ensuring that all vehicles that come to our sites use appropriate principal routes and at social hours.

Our recent work at Newhurst ERF reflects how we implement this in practice. The scheme's planning consent specifies the routing and daily vehicle movement limits that must be followed and monitored. As part of the facility becoming operational in 2023, we implemented a Traffic Management Plan, with key actions including:

- Ensuring all customers are aware of the routing arrangements (which precludes vehicles from passing through certain areas of Shepshed). Newhurst is close to the M1, so most vehicles use this principal route.
- Using HGVs where possible to bring in more waste per vehicle, thereby reducing the total number of vehicles. We discuss tipping options with customers and some of the main hauliers to reduce time on site.
- Some waste types that may require additional handling are booked into certain times or days to avoid peak times.
- There are inevitably times where queues do form, for example during an unplanned outage or delays on the road network outside of our control. At these times, site staff ensure that vehicles are parked up safely on site and, where necessary, vehicles can be turned away to avoid congestion on the main carriageway. Close liaison by the site staff with drivers and directly with hauliers helps to manage expectations.

We also discuss transport issues at our regular local liaison group meetings (see page 54 of this report). Whilst traffic was a key area of concern prior to the site accepting waste, few concerns have been registered since the facility came into operation, a clear reference point that the site's Traffic Management Plan is being properly followed.



ENVIRONMENT CASE STUDY 1

OUR PLANNED CARBON CAPTURE FACILITY AT PROTOS

ENVIRONMENT CASE STUDY 1

OUR PLANNED CARBON CAPTURE FACILITY AT PROTOS

Our planned CCS facility at Protos in Cheshire will play a key role in decarbonising the waste sector by capturing Carbon Dioxide (CO_2) gases from the neighbouring ERF once this is fully constructed and operational – preventing these from being released into the atmosphere.

The facility, developed in partnership with Biffa, will be built on land at the 130-hectare Protos Resource Recovery Park, a major resource recovery hub comprising plots for use in connection with the recycling, recovery and reprocessing of waste materials.

Our proposed carbon capture facility is designed to be fully integrated with our adjacent ERF, which is currently under construction, and will connect into the HyNet CO_2 pipeline – one of the UK's leading industrial decarbonisation projects aiming to reduce the amount of CO_2 emitted across the region by a quarter, starting in the late-2020s.

This status led to the UK Government selecting HyNet in 2023 as a Track 1 Carbon Capture, Usage and Storage (CCS) cluster to support decarbonisation, backed by a £20 billion infrastructure fund – supporting its view of CCS as 'a key technology to enable decarbonisation of UK industry, and that it will help protect and create new jobs, putting the UK and the clusters at the forefront of the global CCS market.'

The CO_2 generated from the treatment of waste within the Protos ERF will be captured in the planned new facility prior to its distribution via the HyNet pipeline for storage in depleted gas fields in Liverpool Bay. Up to 350,000 tonnes of CO_2 – 95% of the emissions from the Protos ERF – will be captured.

Our work in 2023 focused on detailed design work and close engagement with the Department of Energy Security and Net Zero (DESNZ), prior to undertaking an in-person and online public consultation in the autumn to explain our plans. Following close consideration of local responses, we refined our plans ahead of submitting a full planning application, with the backing of DESNZ, to Cheshire West & Chester Council in December 2023.

Subject to the application's determination at the end of 2024, and securing UK Government ICC support for the project as one of the two lead project emitters within the cluster, construction of the facility will commence prior to becoming operational in 2028. The project will form a crucial reference point for Encyclis and the rest of the UK's industrial sector in developing the nation's carbon capture capabilities on the path to net zero 2050.

AT A GLANCE

Location	Protos, Cheshire
Local Planning Authority	Cheshire West & Cheshire
Development Partners	Partnership between Encyclis and Biffa
Process Partners	Fichtner – pre-FEED study (Front End Engineering Design) HZI – FEED contractor MUFG – Project Finance Advisors to the project
CO_2 tonnage to be captured	Approximately 350,000 tonnes, up to 95% of emissions from Protos ERF
Carbon capture process	Post Combustion Capture (PCC) using amine-based solvent
Transmission process	Captured CO_2 will be transmitted to the storage area through a dedicated pipeline via the Eni Above Ground Installation (AGI)
Government interface	Part of Department of Energy Security & Net Zero (DESNZ) Track 1 CCS programmes
Key 2024 milestones	Determination of planning application by Cheshire West & Cheshire Council Securing Environmental Permit Agree final Government ICC support with DESNZ

ENVIRONMENT CASE STUDY 2

OUR IBA PROCESSING FACILITY AT WELLINGBOROUGH

ENVIRONMENT CASE STUDY 2

OUR IBA PROCESSING FACILITY AT WELLINGBOROUGH

Following 14 months of construction and commissioning work, we have begun processing Incinerator Bottom Ash (IBA) at a new facility in Wellingborough, Northamptonshire, as part of a long-term strategic partnership with Day Aggregates. The partnership ensures that by-products of the Energy from Waste process are returned to productive use, contributing to the growth of the UK's circular economy.

The facility became fully operational in May 2024 and will process around 200,000 tonnes of IBA per year from our ERFs at Rookery South in Bedfordshire and Newhurst in Leicestershire. Centred around an aggregate processing plant, the new facility uses the most up-to-date processing equipment to recover non-ferrous light metals and heavy metal fractions.

Once these items are salvaged, the IBA is blended with a type-one aggregate to create Day Aggregates' EcoBlend® range of products. This recycled aggregate blend serves as a load bearing sub-base and back fill for roads, paths, driveways, car parks and structural bases, reinforcing a commitment to sustainable construction. This is in direct response to all new roads constructed in the UK needing to incorporate up to 30% of recycled aggregate base to improve environmental performance.

The end product has several benefits for constructors, including:

- Reduced material costs when compared to primary aggregates;
- Reduced density compared to natural aggregates;
- 50% sustainable aggregate content; and
- Reduces the use of primary material, helping to preserve natural resources.

As the IBA undergoes its journey within the facility – from being tipped, crushed, processed, sorted, and turned into recycled aggregate – a water-based dust management system minimises airborne emissions.

All metals recovered from the IBA, approximately 10% of input tonnage, are then separated for recycling and refinement across the UK and Europe. Ferrous metals are prepared via a third party and are taken to CELSA's Electric Arc Furnace in Cardiff. Non-ferrous metals are sent to third parties in the Midlands to separate heavy metals, including brass and copper, from light metals such as aluminium and zinc, for subsequent reuse across a number of critical industries.

AT A GLANCE

Location	Wellingborough, Northamptonshire
Local Planning Authority	North Northamptonshire
Operator	Day Aggregates
Principal contractor	Stepnell
Processing capacity per annum	200,000 tonnes of IBA per annum
Source material derivation	Encyclis ERFs at Rookery South and Newhurst
Key benefits of facility	Reuse of waste product for construction with multiple cost and environmental benefits; reuse of recovered metals reduces reliance on imported mined materials

ENVIRONMENT CASE STUDY 3

RECYCLING OF APCr RESIDUES FROM NEWHURST ERF

ENVIRONMENT CASE STUDY 3

RECYCLING OF APCr RESIDUES FROM NEWHURST ERF

Our work in supporting the circular economy in 2023 included the start of our partnership with O.C.O Technology to transform APCr residues from our Newhurst ERF into a further range of sustainable aggregate products.

Many wastes react naturally with CO_2. If conditions are carefully controlled, this natural reaction can be accelerated to take place in minutes rather than years which results in the formation of calcium carbonate.

O.C.O uses its patented Accelerated Carbonation Technology (ACT) at its four UK manufacturing facilities to blend carbonated APCr with binders and fillers, prior to pelletising the carbonate into an environmentally friendly Manufactured LimeStone aggregate known as M-LS.

ACT treats APCr with CO, (carbon monoxide) to enable its permanent capture; critically, the finished M-LS captures more CO_2 than is emitted during the whole treatment and manufacturing process, resulting in a carbon negative aggregate. This M-LS has a range of applications in construction, including asphalt and concrete blocks.

A long-term agreement was signed between Encyclis and O.C.O Technology in March 2022. In January 2023 O.C.O took its first delivery of Encyclis' APCr at its ACT facility in Leeds, subsequently processing and recycling 6,039 tonnes from the Newhurst ERF.

The process captured approximately 928 tonnes of carbon, equivalent to 42,163 mature trees or removing 400,000 vehicle movements. This translated to the manufacture of c.15,000 tonnes of M-LS, saving the need to quarry approximately 19,700 tonnes of natural LimeStone.

O.C.O also utilises rainwater capture for its water supply at all of its operational facilities for use within the manufacturing process. This reduces the need for mains water, which is only used as a supplement to the rainwater.

Our work with O.C.O directly supports their aim to process 220,000 tonnes of thermal wastes and APCr throughout the UK, providing a significant contribution to the UK's circular economy.

AT A GLANCE

Facility location(s)	Leeds (principal facility for Newhurst ERF's APCr processing) Brandon, Suffolk Avonmouth, Bristol Wretham, Norfolk
Industrial process	Carbonation of APCr prior to blending with binders and fillers; subsequently turned into aggregate pellets
Source of APCr	Newhurst ERF
Amount of APCr captured in 2023	6,039 tonnes
Tonnes of Carbon captured in process	928 tonnes, equivalent to 42,163 mature trees or removing 400,000 vehicle movements
M-LS created from Newhurst APCr	15,000 tonnes, saving the need to quarry approximately 19,700 tonnes of natural LimeStone
Use for M-LS	Range of applications in construction, including in asphalt and concrete blocks

4. SOCIAL

Based on the outcome of our Double Materiality Assessment, our Social responsibilities focus on two main themes:

- Being a leading employer and responsible operator of facilities, promoting a clear safety-first culture; and
- Having a positive impact on the communities we work in across the UK and Ireland.

4.1 PROMOTING AND DELIVERING A SAFETY FIRST CULTURE

OUR 'SAFETY FIRST' CULTURE

Our commitment is to always put 'Safety First' and in 2023 we launched our Safety First Charter to reinforce this message.

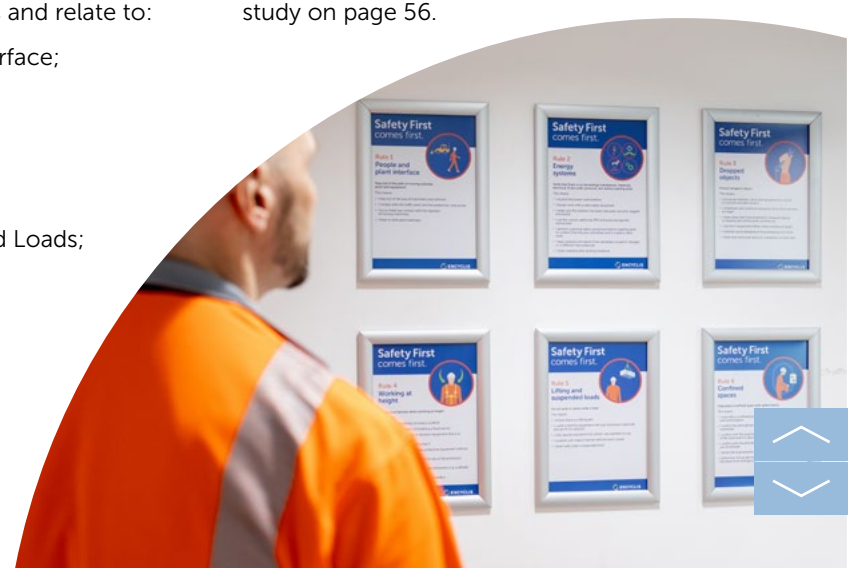
The safety of our employees, visitors and contractors is our number one priority. We want everyone who comes to work at our facilities to arrive at work safely, to work safely and to go home safely to their families and loved ones at the end of each shift or working day.

In 2023, we launched our six 'Safety First' rules alongside our Charter. These were chosen based on the hazards most associated with our operations. These rules now form an integral part of all new starter and contractor inductions and relate to:

- People and Plant Interface;
- Energy Systems;
- Dropped Objects;
- Working at Height;
- Lifting and Suspended Loads; and
- Confined Spaces.

We also introduced 'Stop Work Authority' in 2023. This empowers all employees and contractors to initiate a 'Safety Stop' at work if a perceived unsafe condition, act, error, omission or lack of understanding could result in an undesirable safety incident.

We undertook several internal communication activities across the business to promote the Charter, rules and stop authority. The programme is described in detail in the case study on page 56.



4.1 PROMOTING AND DELIVERING A SAFETY FIRST CULTURE

HEALTH AND SAFETY PERFORMANCE IN 2023

Our policy and communications work in 2023 was supplemented with significant enhancements in our reporting systems.

We implemented **EcoOnline** as our Environmental, Health and Safety (EHS) reporting tool to make it easier for our staff and contractors to raise observations, near misses or incidents. This led to a high number of quality observations being raised and actioned during the year.

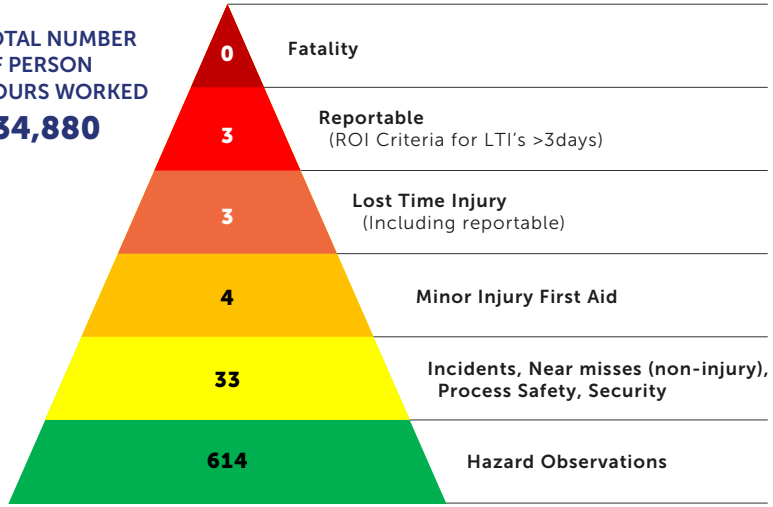
All high potential near misses and incidents are investigated to determine the root cause(s) and provide lessons learnt across all our facilities.

There are different reporting criteria in the Republic of Ireland compared with the UK (Any Lost Time Injuries, or LTIs) over three days must be reported in Ireland whereas its over seven days in the UK. For this reason, Health and Safety statistics for our Dublin facility have been separated from our UK operational facilities.

A total of nearly 500,000 individual working hours were recorded in our facilities in 2023. However, there were only three reportable LTIs at our Dublin facility and none within the UK. All three incidents were fully investigated with actions implemented to reduce the risk of similar incidents occurring in the future.

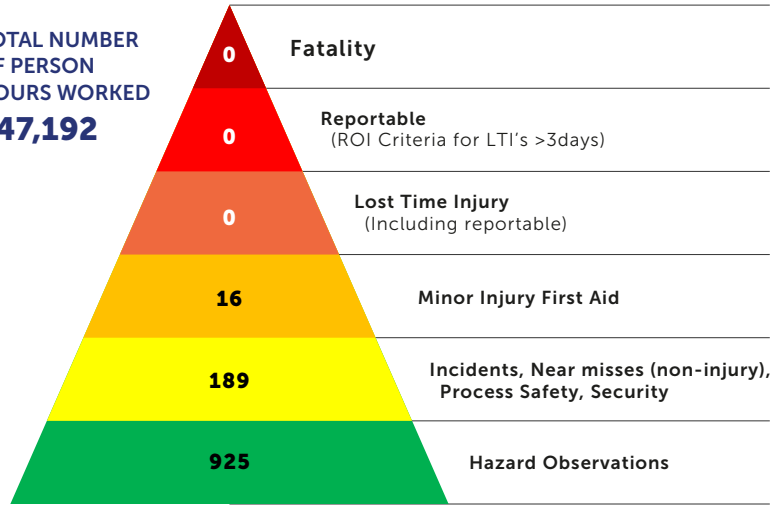
DUBLIN 2023

TOTAL NUMBER OF PERSON HOURS WORKED
134,880



UK ERFs 2023*

TOTAL NUMBER OF PERSON HOURS WORKED
347,192



Rookery full year operational; Newhurst 7 months operational

LOST TIME INJURIES (DUBLIN)

	ENCYCLIS EMPLOYEES & CONTRACTORS
Hours worked *	134,880
Minor Injuries	4
Reportables (ROI)	3
Fatalities	0

* Estimate based on average working hours

LOST TIME INJURIES (UK)

	ENCYCLIS EMPLOYEES & CONTRACTORS
Hours worked *	347,192
Minor Injuries	16
RIDDORS (UK)	0
Fatalities	0

* Estimate based on average working hours

4.1 PROMOTING AND DELIVERING A SAFETY FIRST CULTURE

STAFF WELLBEING

We recognise that employee wellbeing is a key part of our health and safety ethos and in developing an inclusive and engaged workforce.

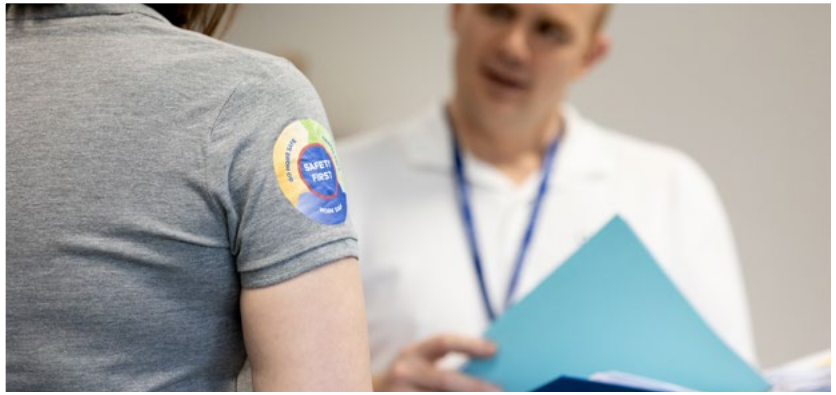
During the onboarding process for new employees, site and office-based staff complete health questionnaires tailored to their role, as well as receiving an onboarding health check.

Through our Occupational Health Services, we provide annual health assessments for all site-based operations and maintenance staff.

We also have Mental Health First Aiders at a number of our sites. They are an identified point of contact to talk through any issues that colleagues have and are trained to signpost them to the additional support that is available, within the business and externally, should it be required.

Encyclis also provides multi-level healthcare provision to its employees through:

- Private medical care with specialist mental health support; and
- Employee Assistance Programme (EAP).



4.2 AN EMPLOYER OF CHOICE

DEVELOPING OUR PEOPLE TO BE THE BEST THEY CAN BE

Our people are central to the sustainability and reliability of our services. In order to attract, develop, and retain the skilled staff that we need to support the transition to net zero, we are determined to be an employer of choice – investing heavily in skills, career development and training to make Encyclis a great place to work. Our efforts in 2023 reflect this ambition.

CAREER DEVELOPMENT AND TRAINING

As part of our commitment to developing a professional management team across the company, we have supported the career development of our managers by providing externally recognised Chartered Management Institute (CMI) qualifications. In 2023, nine staff obtained CMI level 3 qualifications. This is helping to provide our managers with a broader range of skills including team leadership, performance improvement and problem solving.

We have also held workshops to up-skill our supervisors and new managers, with 43 supervisors and managers have been up-skilled on a range of topics within the past twelve months.

OUR APPRENTICESHIP SCHEME

We continue to invest in apprenticeship programmes to welcome new talent to the business and to develop engineering skills, whilst supporting our existing workforce with new opportunities for their own development.

Two apprentices are currently working with our Dublin Maintenance Electrical, Controls & Instrumentation team, undertaking a four-year apprentice programme, one in Electrical Instrumentation, and the other in Mechanical Automation & Maintenance Fitting. The four-year apprenticeship programmes are split into seven phases: four on-the-job (where the apprentices will work at Dublin Waste-to-Energy) and three off-the-job (where course content is delivered in college). Upon the completion of their courses, our apprentices can use their qualifications to launch a successful career within our sector.

In addition, in 2023 we hosted a university student of Mechanical Engineering on a Summer Placement.

In 2024 one further apprentice began work in Dublin and in the next twelve months we aim to extend the apprentice programme to the UK. The schemes provide practical experience to support future careers and strengthen the talent pipeline for the company and the wider industry. Further detail is provided within our **Sustainability Programme for 2024 and beyond** on page 81.

4.2 AN EMPLOYER OF CHOICE

DIVERSITY & INCLUSION

We believe that a diverse and inclusive workforce results in better performance for our organisation. Hearing and acting upon different perspectives acts as a catalyst for innovation and creativity and improves employee engagement, as well as supporting our recruitment programme.

The waste management industry is traditionally male-dominated, which is reflected by our gender diversity statistics that show that 22% of our workforce is female. We have now fully established and we have established succession pipelines to support staff members with their future career development.

MAKING ENCYCLIS A GREAT PLACE TO WORK

Having invested heavily in hiring and training operational and corporate staff, we are now focused on the challenge of retaining and motivating them to support the growing business.
As part of this, we refreshed our benefits programme in 2023, and completed our first employee engagement survey since becoming a standalone company in 2022.

From this survey, 78% of our staff would recommend Encyclis as a great place to work. We will be repeating this staff survey on an annual basis to track progress.

INVESTING IN SKILLS FOR THE FUTURE

Given our work and continued investment in both carbon capture and district heat networks, we recognise the need to develop the skills of current employees as we develop low carbon technologies. We are working with industry groups including Energy & Utility Skills to begin to develop plans for future skills that will be required by the sector.

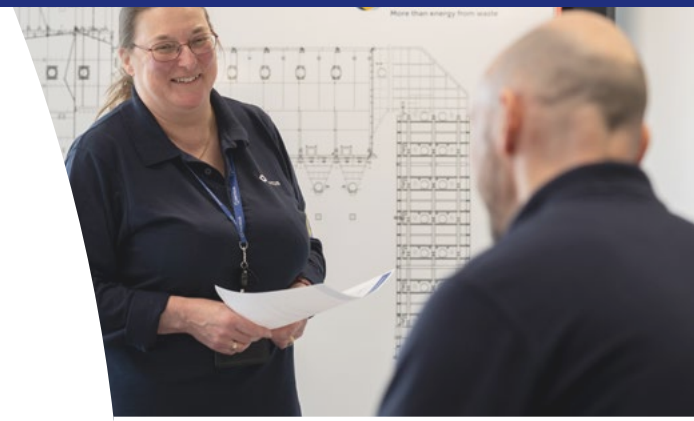
We also expect new jobs to be created in these areas and as one of the EfW operators who is leading the development of CCS technology, Encyclis is an active membership of the Carbon Capture and Storage Association's (CCSA) Skills and Training subgroup. The purpose of this is to understand the future skills required for this growing industry and through working with a wider cohort of companies, we can ensure the effective promotion of new roles to suitable candidates and to put plans in place to provide the appropriate training and development for these roles once they're created.

SUPPORTING OUR EMPLOYEES TO REDUCE THEIR CARBON FOOTPRINT

Our work in 2023 also included supporting our employees to reduce their individual carbon footprints through the implementation of a new electric vehicle (EV) salary sacrifice scheme.

Delivered in partnership with Tusker, this scheme actively speeds up the transition to greener, sustainable employee mobility and it offers our employees the opportunity to drive a brand new fully insured and maintained car.

Since its launch in September 2023, the scheme has been popular with employees with 21% take-up across our UK workforce.



4.3 HAVING A POSITIVE IMPACT ON LOCAL COMMUNITIES

COMMUNICATING EFFECTIVELY WITH LOCAL COMMUNITIES AND SUPPORTING LOCAL GOOD CAUSES

We strive to make a positive impact wherever we can at all of our operational sites. We embrace our responsibilities towards the local community and there are several ways we support and engage with people and organisations nearby.

To maintain strong relationships with our local communities we must make a continued effort, whether our sites are 'at planning stage' or are established community assets.

4.3 HAVING A POSITIVE IMPACT ON LOCAL COMMUNITIES

DUBLIN

WELCOMING VISITORS TO OUR FACILITY

Since the beginning of operations at our Dublin Waste-to-Energy (Dublin WtE) facility in 2017, we have hosted hundreds of group tours as part of our commitment to being a good neighbour. These are valuable for showcasing to the public how our facilities work and we take pride in their demonstration.

Dublin WtE hosted a total of **1769 visitors** within **88 tour groups in 2023**. This included **25 school groups**, and **13 university groups**.

This included the Dublin team welcoming Patrick Child, the European Commission's Deputy Director for General Environment, for a tour in June 2023, prior to a comprehensive discussion on waste to energy. His visit included history of the plant, an overview of recycling and waste management in Ireland as well as compliance with the new Industrial Emissions Directive (IED) coming into force in the EU. The renewable energy output from the plant and the future Dublin district heating scheme were amongst other key topics discussed.

In August 2023, Eamon Ryan, the Irish Environment Minister came to the facility to launch the Irish Government's District Heating Steering Group's report recommending actioning the roll-out of district heating schemes. The largest of these schemes will be Dublin City Council's planned district heating project for which Dublin WtE will be the heat source.

> "I had a very useful tour seeing the operation. It was built with district heating in mind, looking at the kit down below, it's sitting there ready to go and we need to start tapping into that waste heat."
>
> **Eamon Ryan, Irish Environment Minister**

COMMUNITY FUNDING FOR GOOD CAUSES

The Dublin WtE Community Gain Fund provides financial assistance to community-based clubs, groups, voluntary organisations, educational groups, individuals or businesses for the development of educational, environmental, community and recreational projects in the areas surrounding our facility.

In August 2023, the Dublin WtE Community Gain Fund announced a grant funding to 32 community projects. The projects funded included:

- Community Biodiversity Garden for Ringsend Irishtown Tidy Towns Group;
- Centre Modernisation for the Sandymount Community Centre; and
- Theatre for Teenagers for The Lir Academy.

COMMUNITY GAIN FUND CASE STUDY

IRISH NAUTICAL TRUST

One of the beneficiaries of the Dublin Waste-to-Energy Community Gain Fund has been the Irish Nautical Trust. This is a local charity established in 1986 to ensure the retention of Maritime Heritage and the future of maritime skills in Dublin Port It also provides a comprehensive certified training programme for locally unemployed and disadvantaged young people so that they can reach the level of competency required to operate marine craft.

Since 2019 it has received funding from Dublin Waste-to-Energy to help fund three different vessels:

- **The Liffey Sweeper**, which removes debris from the River Liffey, River Dodder, and Dublin Port area. The operation helps to prevent waste that floats down the River Liffey finding its way into the Irish Sea. It also provides opportunities for use as a training vessel in conjunction with maritime training programmes.
- **A support boat** which allows the cleaning of areas in the River that the Liffey Sweeper cannot reach.
- A training **Rigid Inflatable Boat (RIB)** for the Trust's training programme.

4.3 HAVING A POSITIVE IMPACT ON LOCAL COMMUNITIES

NEWHURST

THE NEWHURST LLC

Since construction of the Newhurst ERF began in 2020, we have been working to foster a positive relationship with the communities that we serve, principally through the Newhurst Local Liaison Committee (LLC).

The LLC plays a key role in ensuring effective engagement between our facility and the local community. It promotes dialogue with neighbours to build an open and transparent relationship and aims to:

- Be a consultative forum to encourage constructive dialogue and general discussion between all interested parties;
- Improve understanding of the process of construction and plant operations of the Newhurst facility and actions taken on site;
- Ensure that relevant issues and concerns of the local community are heard and understood and addressed where possible; and
- Allow for other issues to be raised, which are outside the scope of the LLC to be referred to appropriate agencies.

Meetings are held on a quarterly basis, and the Committee members include representatives from the local community, elected members of the County Council, Borough Council and Town Council, as well as representatives from the Environment Agency, Encyclis and Biffa.

We held four LLC meetings in 2023. The majority of questions received from the local community related to emissions, which we discussed and addressed via the LLC.

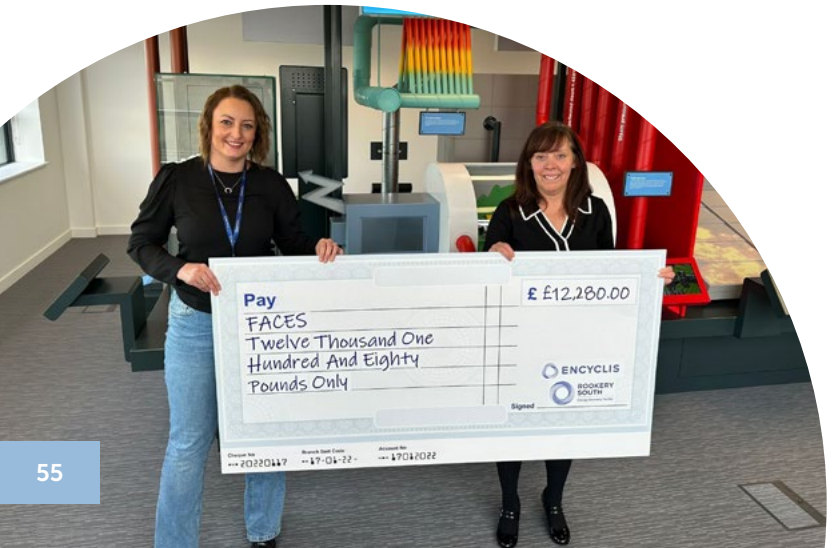
4.3 HAVING A POSITIVE IMPACT ON LOCAL COMMUNITIES

ROOKERY SOUTH

EMPLOYING A LOCAL WORKFORCE AND USING A LOCAL SUPPLY CHAIN

As an established community asset, we are proud that the Rookery South ERF supports the local economy through direct employment opportunities and supplier relationships.

Wherever possible, we use local suppliers of services and materials. To ensure that the economic benefits of the project are maximised for Bedfordshire's businesses, we joined the Bedfordshire Chamber of Commerce to help promote employment and supply chain opportunities for the facility.



ROOKERY SOUTH COMMUNITY TRUST FUND

There is also a Community Trust Fund at Rookery South, with grant applications invited on an annual basis from nearby not-for-profit organisations. The fund prioritises those which promote renewable energy, energy efficiency and recycling.

Grant recipients in 2023 included:

- A grant for council offices to have solar panels linked to the Ampthill Town Council Sustainability plan;
- Autism Bedfordshire, enabling social groups for autistic adults in Ampthill & Marston Moretaine;
- Marston Moretaine Allotment Society to establish compostable toilets for allotment users; and
- The Wildlife Trust BCN Limited for a Perimeter Fence around Cut-Throat Pond in Ampthill.

In 2023, Rookery South also launched an initiative to donate surplus equipment, which included:

May 2023 – YouTurn Futures received equipment to assist them in setting up their very first office. They help build positive pathways for young people vulnerable to exploitation and criminal activity.

August 2023 – Millbrook Village Hall received donated chairs following the refurbishment of our staff canteen.

CHARITABLE DONATIONS AND THE CIRCULAR ECONOMY

Staff at Rookery South have also organised and participated in events to support local good causes.

- In January, the team at Rookery South took part in a charity raffle for Bedford-based FACES (Family and Children's Early-help Services) which offers practical and emotional support to local families under stress due to abuse, poverty and mental health problems. A £12,280 donation was raised and funded four six-week 'Emotion detective' sessions at schools, as well as the recruitment of a new member of staff for the project.
- In July, the Rookery South rowing team reached the semi-finals of the Milton Keynes Dragon Boat Race, raising £530 for Keech Hospice Care, which provides free, specialist care for adults in Luton and Bedfordshire, and children from Bedfordshire, Hertfordshire and Milton Keynes living with a life-limiting illness.

VISITOR AND EDUCATION CENTRE

Rookery South is also the only facility in our portfolio with its own **dedicated visitor & education centre**. The work of this centre is highlighted within a specific case study on page 58.

SOCIAL CASE STUDY 1

SAFETY FIRST: PROMOTING OUR CHARTER, RULES AND STOP AUTHORITY ACROSS THE BUSINESS

SOCIAL CASE STUDY 1

SAFETY FIRST: PROMOTING OUR CHARTER, RULES AND STOP AUTHORITY ACROSS THE BUSINESS

One of our key programmes of 2023 involved the roll-out of the "Safety First" policies shown on page 47 through a series of in-person workshops and meetings across the business – helping to embed these principles within our operations.

This work included the Managing Director of Operations and other key senior staff travelling to each operational site in September to launch and introduce the Charter and the six Safety First Rules – with signed Charters now on display at each of our facilities.

This approach was jointly delivered with monthly Toolbox Talks at all three of our operational sites, plus our Protos ERF (under construction).

Each meeting explored one safety rule in detail, with November's talk at Rookery South a clear example:

> In November 2023 our focus toolbox talk was our Safety-First Rule No.3 Dropped objects. A cause of 29 fatalities and 7,000 injuries in the UK in 2022 made it one of the top 3 causes of deaths in the workplace. At Rookery South ERF, specialist training supplier 'Never Let Go' delivered a series of training courses to highlight the danger of death or injury as a result of a dropped object and ways we can prevent these occurrences.

The Encyclis leadership team and Board also demonstrated their commitment to Health and Safety in 2023 by attending IOSH Leading Safely training – ensuring that the company's leaders and directors fully understood their responsibilities towards Health and Safety.

THE PROMOTION OF 'SAFETY FIRST' ACROSS THE ENCYCLIS BUSINESS

Location(s)	Rookery South, Bedfordshire Newhurst, Leicestershire Dublin Protos, Cheshire
Key methods	Formal launch of Charter and rules at each operational site Sign-up to Charter by each facility, with signed charters on display at each site Toolbox talks on a monthly basis, covering each key rule periodically Separate training for Encyclis' Executive team to emphasise their responsibility for Health & Safety in the business
Numbers of toolbox sessions undertaken in 2023	4: the first four Safety First toolbox talks took place from September to December following the formal launch of the Charter
Number of staff that engaged with training and toolbox sessions in 2023	All 165 O&M staff

SOCIAL CASE STUDY 2

THE ROOKERY SOUTH ERF VISITOR CENTRE AS A KEY COMMUNITY ASSET

SOCIAL CASE STUDY 2

THE ROOKERY SOUTH ERF VISITOR CENTRE AS A KEY COMMUNITY ASSET

Our dedicated educational and visitor centre at Rookery ERF opened for visitors in late 2022, subsequently welcoming hundreds of visitors in 2023 to understand Energy from Waste's role in society.

Rookery South's visitor centre has two key elements:

- An interactive exhibition that fully explains how the facility works and EfW's role in energy recovery and the circular economy, providing visitors with the opportunity to engage with all our on site processes, from the import of waste at the weighbridge, to the export of electricity; alongside
- A learning hub, with fully interactive screens in its classrooms.

In addition to the fully equipped exhibition and learning hub, we also offer plant tours to students aged eight and over (with supervision). This enables students to appreciate the scale of the facility, along with a more detailed look at our control room, our safety procedures, and the separation of materials prior to distribution and further treatment off-site.

Overall, 483 people from 41 tour groups visited the Rookery South visitor centre in 2023, including over 100 school pupils and over 100 students in higher education, residents from local villages including Houghton Conquest and long-standing groups including the Bedford Civil Engineering Society and Ampthill Rotary Club.

We received positive feedback from our visitors, including local residents commenting that their visits really helped with their "understanding of energy from waste process", alongside the Chair of the East of England Waste Technical Advisory Body mentioning that the visitor centre sets the standard for which other similar facilities should be aiming.

THE ROOKERY SOUTH VISITOR CENTRE IN DETAIL

Location(s)	Within Rookery South ERF, Bedfordshire
Key focus of visitor centre	Explanation of how the ERF works; demonstration of Energy from Waste as essential social infrastructure; showcase of Encyclis' work as part of the circular economy
Target audience	Local community groups Schools Colleges Universities
Number of people that officially visited the centre since opening in 2022 and 2023	500

5. GOVERNANCE

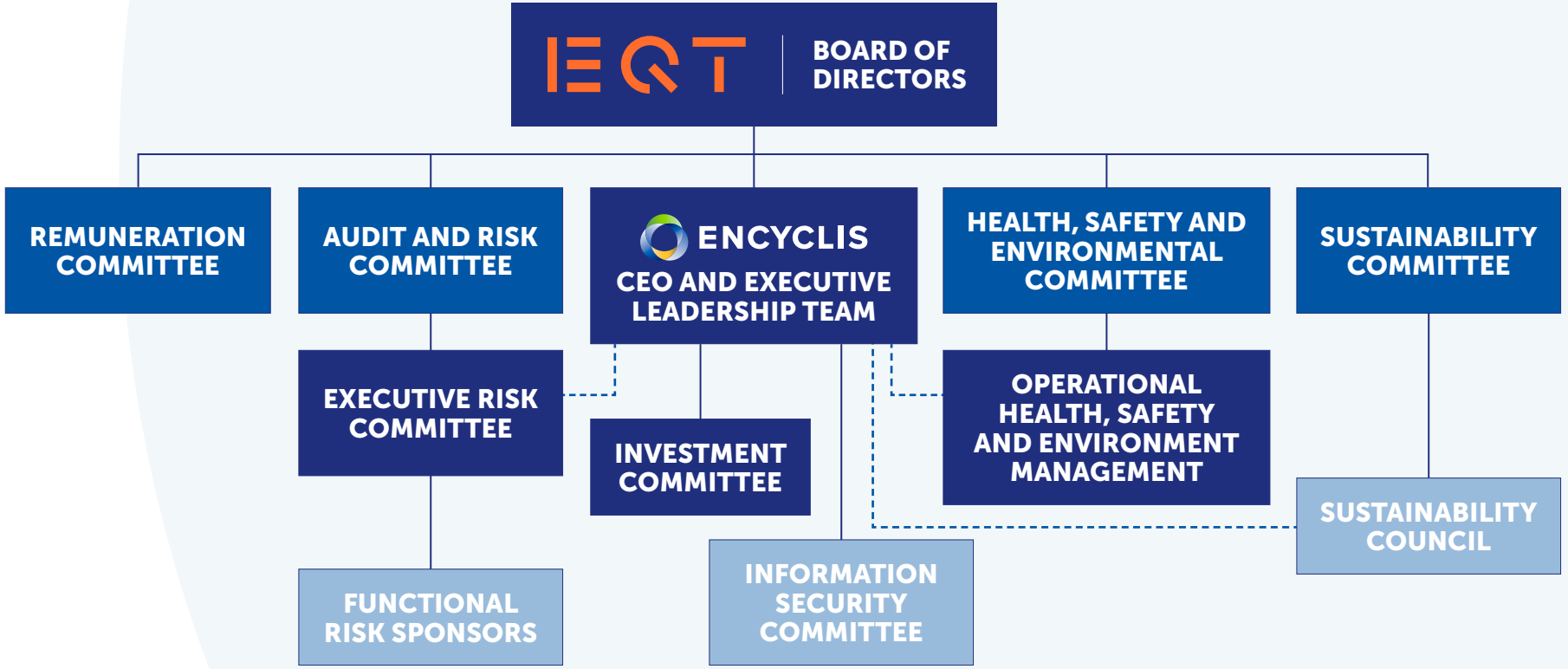
Based on the outcome of our Double Materiality Assessment, our approach to Governance focuses on two main themes:

- Effectively overseeing and managing sustainability through our structures, policies, and procedures; and
- Continuing to act as a responsible business.

5.1 EFFECTIVELY OVERSEEING AND MANAGING SUSTAINABILITY

Underpinning all of our sustainability work is a robust governance structure and management process to ensure that our commitments and responsibilities are monitored and delivered.

The diagram on the right-hand side maps our established governance and reporting structure throughout the business.



5.1 EFFECTIVELY OVERSEEING AND MANAGING SUSTAINABILITY

BOARD OF DIRECTORS

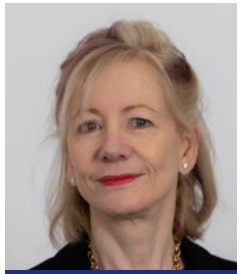
We have an Executive Leadership Team (ELT) with a delegated authority structure, providing a high level of governance and control throughout the business. The Board of Encyclis Holdco Limited, the parent company of the Encyclis Group, contains external experts that have been appointed to the Board as non-executive directors.

BOARD OF DIRECTORS

MARK BURROWS-SMITH
CHAIR

KARL-HEINZ MÜLLER
BOARD MEMBER

ANNA SUNDELL
BOARD MEMBER



MIRIAM GREENWOOD
BOARD MEMBER & CHAIR OF SUSTAINABILITY COMMITTEE

ELIZABETH BARBER
BOARD MEMBER & CHAIR OF AUDIT & RISK COMMITTEE

LORENZO PRADA
BOARD MEMBER

EXECUTIVE DIRECTORS

OWEN MICHAELSON
CHIEF EXECUTIVE OFFICER

MARK CORBEN
CHIEF FINANCIAL OFFICER

MARIA GREGORY
GENERAL COUNSEL & COMPANY SECRETARY

5.1 EFFECTIVELY OVERSEEING AND MANAGING SUSTAINABILITY

SUSTAINABILITY COMMITTEE

We have a Sustainability Sub-Committee of the Board with overall responsibility for sustainability matters in the business. It comprises a majority of non-executive directors including the Chair of the Board and the Chair of the Audit & Risk Committee.

Committee members have the appropriate knowledge, skills, and expertise regarding sustainability matters to carry out the duties and responsibilities delegated by the Board, but are also responsible for:

- Following current trends and identifying emerging sustainability risks and developments in the regulatory landscape, in turn advising the board on changes required;
- Overseeing the regular review and updating of Encyclis' policies and procedures, as well as the controls for the collection, management, and monitoring of sustainability information; and
- Reviewing and monitoring the mechanisms for stakeholder engagement and advising the board on the outcomes of the efforts.

The Sustainability Committee meets quarterly to discuss with shareholders and Council members (see text on right) the progress against each part of our sustainability programme, assuring compliance with corporate policies.

The Sustainability Committee Chair delivers the annual Sustainability Report to the Board for approval at the end of Quarter 2 of each year.

SUSTAINABILITY COUNCIL

Our Sustainability Committee is supported by a dedicated Sustainability Council, composed of a multi-disciplinary group of volunteers from within the Group with experience across the portfolio.

The Council is the 'critical friend' to the sustainability governance process across Encyclis. This facilitates departments' compliance to ESG processes and performance metrics with an appropriate sustainability strategy.

The Council is comprised of ten subject matter experts who together have different technical expertise and perspectives from across the portfolio. The Council meets every 12 weeks and is chaired by the Director of Sustainability at Encyclis, who reports into the Chief Executive Officer and the Encyclis Board. To ensure alignment, the Chair of the Sustainability Committee engages directly with the Council on an annual basis.

It was formed in October 2022 and met four times in 2023 to take forward work that included:

- Reviewing the impact of the UK Emissions Trading Scheme on methodology, reporting and verification;
- Discussing the forward scope of the sustainability report for 2023; and
- Providing feedback on critical sustainability drivers across the business, including:
  - New finance systems to ensure consistent reporting;
  - Employee survey content to access internal stakeholder feedback;
  - Proposal to transfer IBA processing to an on-island solution for Dublin to reduce Scope 3 emissions;
  - CCS update for Protos to highlight decarbonisation drivers at industrial scale;
  - Legal review of all internal policies and processes to ensure compliance within the business; and
  - ISO triple certification delivery at Rookery and Newhurst to support our 'Safety First' priority and environmental excellence performance.

5.2 BUSINESS RESILIENCE AND RISK MANAGEMENT

BUSINESS MODEL RESILIENCE AND FINANCIAL PERFORMANCE

Given the Group's principal activities, our Board takes a long-term approach to its decision-making to ensure that the Company is able to deliver its strategy of creating long-term sustainable value for all of our stakeholders. Our Board reviews the financial and operating performance of the Group, including dedicated attention to the environmental and health and safety performance. It also reviews key risks and opportunities in presentations, proposals, and business cases. The principal financial KPI tracked is EBITDA versus budget, alongside waste tonnage, energy output, and the rate of all recordable incidents.

We are committed to providing services which meet or exceed client expectations. To ensure this is consistent throughout the business, senior management is responsible for establishing our Quality Policy Statement and ensuring requirements are implemented. We use clear indicators to measure performance, drive continuous improvement, and review quality performance.

As the environmentally preferred alternative to landfill, the number of Energy from Waste facilities in the UK and Ireland has grown in line with waste generation over the last decade. We have been keen to ensure that we develop facilities in locations where there is a strong need for landfill diversion and safe processing of residual waste. We anticipate the amount of residual waste to decrease over the next decade as policies – such as England's Resources & Waste Strategy, the UK Plastic Packaging Tax, the Irish Commercial Waste Regulations, and Deposit Return Scheme – continue to drive efforts to increase recycling and waste prevention.

It is expected, however, that residual waste will continue to exist. Our role is to ensure that we process what is left safely and maximise the recovery of resources. With this future in mind, we have developed a five-year strategy that aims to strengthen and future-proof the core of our business and ensure we are able to pursue opportunities and diversify. This includes:

- Ensuring safety underpins our fundamental business for staff, guests, and communities through all of our operations;
- Fulfilling our net zero ambitions by further decarbonising our operations, in particular working with the UK Government to install CCS technology, beginning with our Protos facility in Cheshire;
- Maximising our investment in district heating infrastructure where feasible, to support community and business decarbonisation and exploring synergies with local authorities; and
- Switching to sustainable start up fuel.

Where possible, we will also use our buying power as a business to deliver improved environmental and social outcomes. This was clearly demonstrated in 2023 through the debt facility agreed for our new Walsall ERF being linked to environmental performance and outcomes, as described in our case study on page 79.

5.2 BUSINESS RESILIENCE AND RISK MANAGEMENT

EFFECTIVE RISK MANAGEMENT

GOVERNANCE AND RISK MANAGEMENT

We take our corporate governance and strategic and operational risk management responsibilities very seriously. This applies equally to the business and operational activities of Encyclis Holdco Limited and all direct and indirect subsidiaries thereof ("**Encyclis Group**").

Operating across the waste and power sectors, we are exposed to a variety of risks that could materially impact our ability to achieve our strategic priorities. Both the Encyclis Board and the Encyclis Executive Leadership Team work to ensure that the identification, management, mitigation and reduction of risk is embedded into every level of the culture and operations of the business.

Risk management is frequently reviewed, challenged and adapted to meet the Encyclis Group risk appetite. Risk review is carried out at all levels of the business, from the supply chain, in day-to-day operations and at plant level, all the way to the Board's strategic assessment of the Group's business plan.

One of our most important responsibilities is our effective management of Environment, Social and Governance factors, with this Report acting as our principal method of reporting progress and determining our work in the future.

For completeness, the directors consider that the principal risks and uncertainties faced by the Group and the Company are in the categories on the right-hand side and the following page. Our Risk Management Framework is detailed on pages 67 to 69.

A) HEALTH AND SAFETY

There is a risk of a major health and safety incident within the Group. Safety First is the Group's primary value. Safety, health and wellbeing is at the heart of everything the Group does. The risk is actively managed at all the Group's premises.

B) ENVIRONMENTAL RISK

Environmental risk and its mitigation is key for the Group's long term operations. The Sustainability Council plays a prominent role in risk mitigation through its focus on policy, regulation and engagement by ten subject matter expert volunteers from across the business.

C) COMPETITION RISK

Competition risk is currently mitigated as the group has long term waste disposal contracts for a high proportion of the permitted capacity of its operating plants.

The directors of the Group manage competition risk through close attention to customer service levels, product innovation and contract management.

D) REGULATORY RISK

The risk that current laws or regulations will be repealed or modified in a way which has an adverse impact on the construction, future operations or the competitiveness of the facility.

The directors of the Company manage regulatory risk by staying well appraised of the regulatory environment within which a facility will operate by maintaining good working relations with various regulatory agencies, having oversight of the facility's construction and future operational activities and by working to anticipate and influence future changes or developments in regulatory policy.

The Directors of the Group are aware of the developing guidelines on carbon emissions and are proactively pursuing opportunities relating to carbon capture. The Group's Protos ERF facility was one of the two ERF projects selected for the UK Government's Carbon Capture Cluster Sequencing programme that will bring forward carbon capture at commercial scale in line with national decarbonisation targets.

5.2 BUSINESS RESILIENCE AND RISK MANAGEMENT

E) POLITICAL RISK

The geopolitical situation in Eastern Europe intensified on 24 February 2022 with Russia's invasion of Ukraine. The war between the two countries continues to evolve as military activity proceeds and additional sanctions are imposed. During the year, the war continued to influence economic and political decision-making. The war is affecting economic and global financial markets and exacerbating ongoing economic challenges, including issues such as rising inflation and global supply-chain disruption.

The Group is exposed to macro-economic movements in the electricity price and waste collection gate fees in UK and Ireland, or unrealistic increases in costs, including infrastructure costs, impacting adversely on the Group. These risks are managed by electricity pricing strategies, long term contracts with waste customers, controls over the sourcing of products and services and strict control of costs.

F) ECONOMIC RISK

The Group is exposed to macro-economic movements which could drive increases in costs, including infrastructure costs, resulting in an adverse impact on the Group. This risk is managed by controls over the sourcing of products and services, strict control of costs and entering long term fixed price contracts.

G) LIQUIDITY RISK

The Group actively manages its cash resources to ensure that it has sufficient available funds for operations and its capital expenditure programme. The Group has committed financing facilities in place for all committed construction projects.

H) INTEREST RATE RISK

The Group and its joint ventures third party financing is subject to open market variable interest rates which gives rise to the risk of volatility in respect of finance costs. The Group and its joint ventures have entered into floating to fixed rate swap hedging instrument agreements to manage the Group's interest rate risk.

I) FOREIGN CURRENCY EXCHANGE RISK

The Group, through its joint ventures, has contractual commitments in respect of construction costs that are denominated in Euro (€) and Swiss Francs (CHF) which gives rise to the risk of volatility in respect of foreign currency exchange rates. Where relevant, the Group's joint ventures have entered into foreign currency exchange rate hedging instrument agreements to manage foreign currency exchange rate risk.

J) BUSINESS INTERRUPTION RISK

Business interruption, through whatever form, could potentially impact on all aspects of Group from the acquisition, development and operation of energy recovery facilities in the UK and Ireland. Business continuity planning and ongoing communication with key stakeholders, aligned with on-going assessment by management, are the key measures used to mitigate the risk of business interruption.

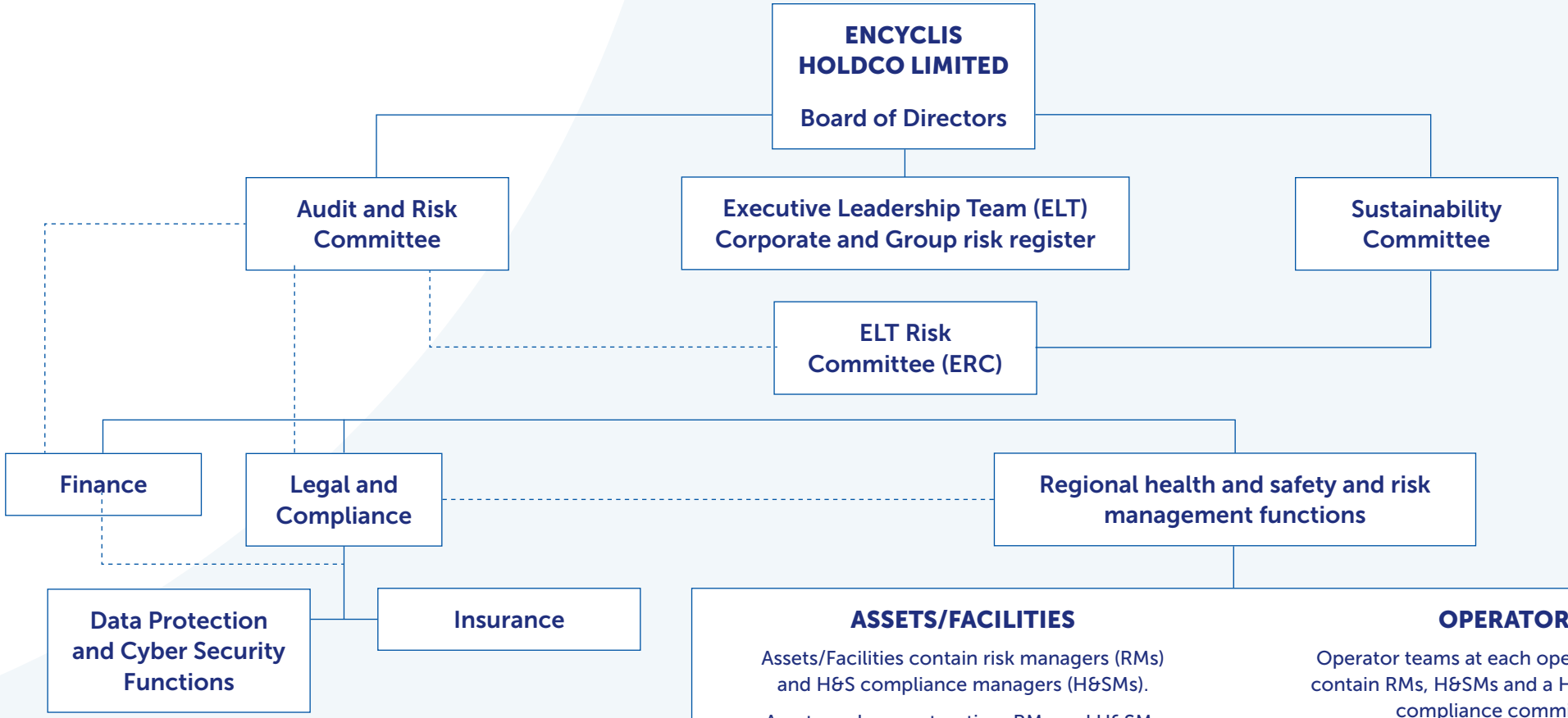
K) CONSTRUCTION RISK

There is a risk of significant delays with construction projects, a risk of increased costs and construction quality issues. Each of these risks are actively managed by the Group's construction team and mitigated through the Group's construction agreements with its key construction suppliers.

L) PEOPLE

The Group is exposed to the risk of staff attrition, loss of experience with staff turnover, real wage inflation and the risk of the lack of bandwidth to deliver projects adequately. The Group actively manages its workforce and mitigates this risk with retention schemes and notice periods for adequate handovers during periods of attrition.

RISK MANAGEMENT FRAMEWORK



5.2 BUSINESS RESILIENCE AND RISK MANAGEMENT

OUR RISK MANAGEMENT FRAMEWORK AT A GLANCE

ENCYCLIS HOLDCO LIMITED BOARD OF DIRECTORS

- Sets strategic objectives.
- Responsible for endorsement of risks, setting risk appetite and ensuring effective risk management processes are in place.
- Reviews principal risks against determined risk appetite on bi-annual basis.

AUDIT AND RISK COMMITTEE

- Board-appointed committee.
- Meets on a minimum basis of three times a year.
- Chaired by a non-executive director of Encyclis Holdco Limited.
- Conducts bi-annual 'deep dive' into principal risks of Encyclis Group.
- Assists the Board in fulfilling its oversight responsibilities of the Encyclis Group risk management process.

SUSTAINABILITY COMMITTEE

- Board appointed committee.
- Meets bi-annually as a minimum.
- Chaired by a non-executive director of Encyclis Holdco Limited.
- Provides primary content and expert review of annual Encyclis Sustainability Report.
- Assists the Board in fulfilling its oversight responsibilities of the Encyclis Group sustainability management process.

EXECUTIVE LEADERSHIP TEAM (ELT)

- Manages risk in accordance with the risk appetite approved by the Board.
- Implements board's strategic objectives.
- Ensures that an effective risk management process is in place by managing the internal control framework and reporting structure as well as the implementation and review of risk mitigation.

ELT RISK COMMITTEE (ERC)

- Formed of members of ELT and chaired by General Counsel.
- Responsible for reviewing and analysing risk registers of each of the functional departments of the business and monitoring and supporting the management of risk across the business.
- Each executive functional head reports into the Executive Risk Committee which in turn reports into the Audit and Risk Committee.
- Meets quarterly and conducts bi-annual 'deep dive' into principal risks of Encyclis Group.

OTHER COMMITTEES

- Other functional committees sit alongside and below ERC.
- In-part review and report on risk management, including, but not limited to, Information Security Committee and Health and Safety Committee.
- Each department and function has its own risk register and risk management process.
- Responsibility for the departmental risk management sits within each department.

5.2 BUSINESS RESILIENCE AND RISK MANAGEMENT

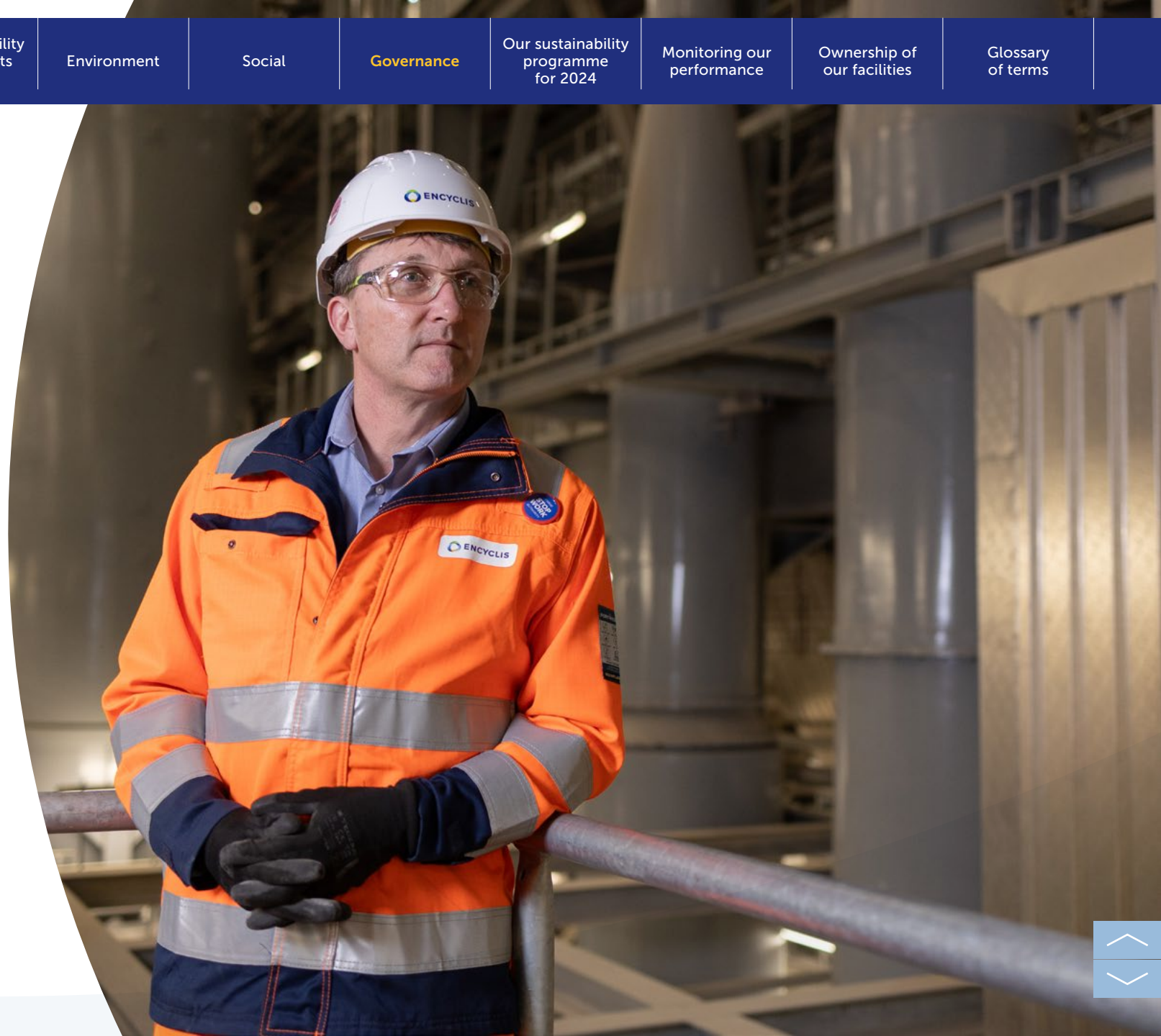
OUR INTERNAL CONTROL FRAMEWORK

RISK MANAGEMENT POLICIES AND STRATEGIES

- Deploy appropriate risk management policies and strategies to identify, analyse and manage risks associated with Encyclis Group's business and operations.
- Provide a safe, healthy, and environmentally compliant environment to work in.
- Minimise financial and reputational losses.

RISK EVALUATION, MITIGATION AND MANAGEMENT

- Standard-form risk register framework used to report on operational risks to ensure consistency of approach.
- Eleven functional risk registers: Health and Safety; Operations; Construction; Sustainability; Finance; Legal; Information Technology; Commercial; Human Resources; Policy; and Reputation and Communications.
- Each functional risk is reported on the basis of its impact on the business and likelihood of occurring in the next five years.
- Separate, more detailed, methodology used to monitor and report on (i) construction and (ii) operations.



5.2 BUSINESS RESILIENCE AND RISK MANAGEMENT

WORKING WITH OUR SUPPLY CHAIN TO ENSURE THE AVAILABILITY OF KEY MATERIALS AND PRODUCTS

Our business is conducted with honesty, respect and integrity. We see ourselves as a trusted partner to our customers, communities, suppliers, and regulators and want to ensure this respected working partnership is maintained.

We have created and put in place a structure and framework to help us drive good governance within our operations and wider value chain. A key part of this has been the roll out of our supply chain evaluation criteria; we review and evaluate suppliers' policies and procedures from the perspective of:

- Environmental law
- Health and Safety law
- Combating modern slavery
- Corporate compliance
- Environmental policies
- Health and safety policies
- Insurance policies

Once we have this information, we verify it and provide the recommendation to our operations team whether or not to go ahead with the partnership.

To support our supply chain evaluation criteria, we have robust gate-keeping systems in place to have complete purchasing visibility and transparency across our operations.

These systems also ensure our standards are adhered to, setting out different procedures depending on the value of the items being purchased. We require, for example, that all wooden products need to be purchased from Forest Stewardship Council (FSC) certified suppliers, and that power consumption and efficiency metrics are evaluated in the purchasing decision-making process.

Encyclis' Head of Procurement, David Carruthers, summarises this commitment below and explains how he thinks Encyclis makes a positive impact.

"It is important to me that I am working for an ethical company, a company that suppliers want to do business with, and a company that is not just making money regardless of the cost to people and the environment and this extends to our supply chain. I am passionate about integrity in our supply chain, because by working together to advance environmentally and ethically, we can make a real difference.

We are careful to monitor, analyse and try to recover or recycle the by-products that come out of our operations, and are looking to our supply chain to do the same. We also care about our communities and what they think of us, and this drives us to continually improve our ethical practices and environmental procedures, including asking our supply chain partners to do the same."

5.2 BUSINESS RESILIENCE AND RISK MANAGEMENT

WORKING EFFECTIVELY WITH OUR SUPPLY CHAIN: RS GROUP

RS Group is a leading provider of product and service solutions to the global industrial sector. They are a key supplier of Encyclis providing essential maintenance, repair, and operations (MRO) products to support our operations. Having companies like RS Group as part of our supply chain supports the Encyclis commitment to partner with organisations that have a strong ESG approach.

"At RS, we are committed to mobilising our product suppliers to offer our customers more sustainable product and service solutions to help meet their ever-growing ESG needs. At the same time, we're reducing the environmental impact of our distribution service by developing greener distribution centres, packaging, and logistics.

In November 2021, we launched our 2030 ESG action plan – For a Better World – in which we laid out our ambition to be net zero in our direct operations by 2030 and in our wider value chain by 2050. This included setting SBTs covering our Scope 1, 2 and 3 emissions, with a 75% reduction in direct emissions by 2030. By the end of 2023/24, we had reduced our Scope 1 and 2 emissions by 61% since our 2019/20 baseline and the intensity of our product transportation emissions by 26%, so we are making good progress. Our emissions reporting is externally verified by a third party, to provide further assurance of our progress. We have also set supporting targets for packaging, waste and suppliers to drive further environmental performance and climate action and a greener distribution service for our customers.

Beyond our own business we are committed to supporting our customers and suppliers on their journey to tackling climate change and achieving net zero by 2050. This includes offering an increasing range of sustainable product and service solutions to our customers through our Better World product range, as well as committing to engage 67% of our suppliers by spend to set SBTs by 2025. At the end of 2022/23, 32% had done so with the SBTi."

Andrea Barrett,
VP Social Responsibility and Sustainability at RS Group

5.2 BUSINESS RESILIENCE AND RISK MANAGEMENT

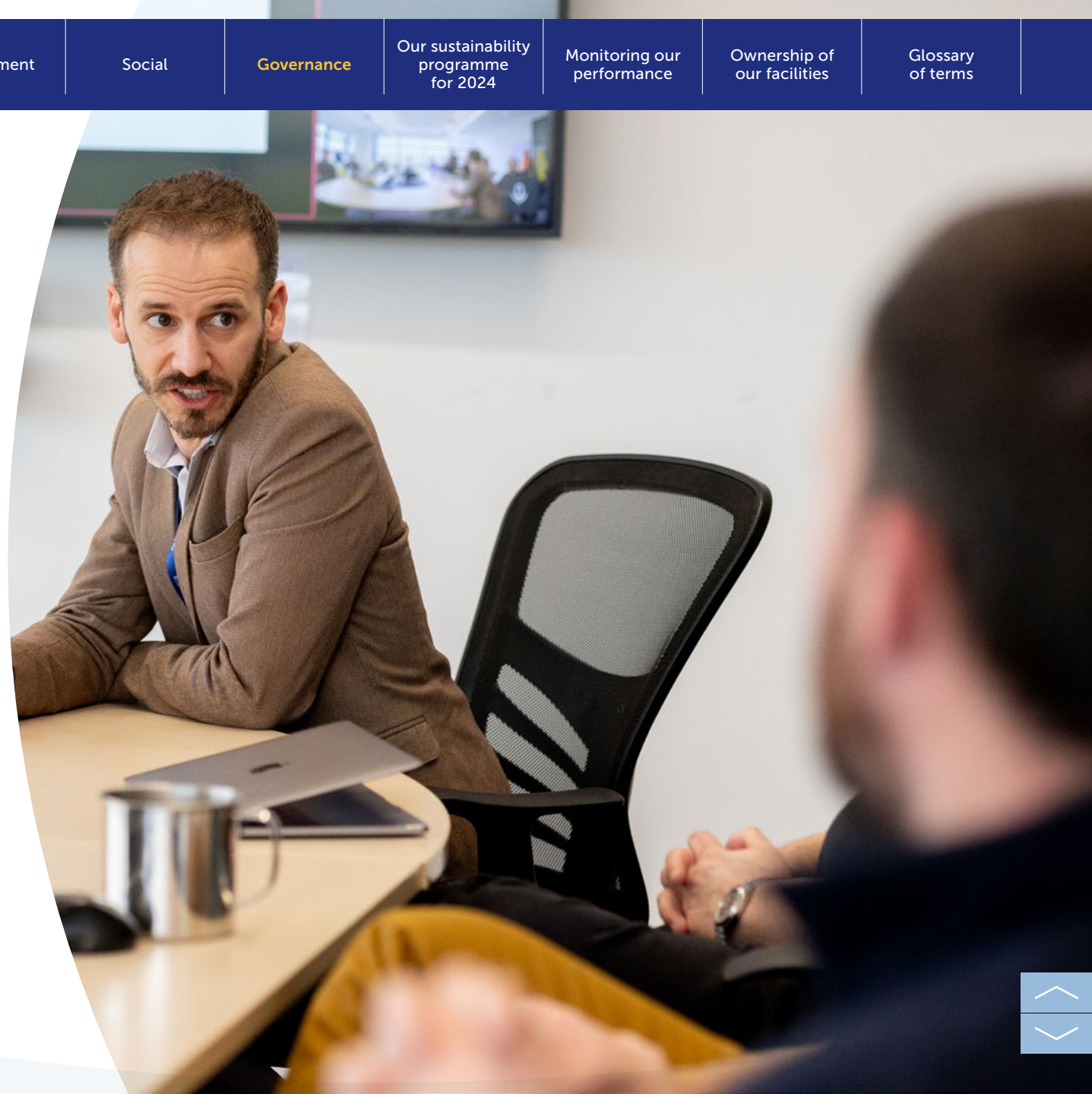
DOOSAN Škoda Power

WORKING EFFECTIVELY WITH OUR SUPPLY CHAIN: DOOSAN SKODA POWER

Doosan Skoda Power delivered steam turbine generators of their own design and production to Encyclis, including our operational sites at Dublin, Rookery and Newhurst and Protos (currently under construction).

A mutually fair and reliable relationship between Encyclis and Doosan Skoda Power is assured through Long Term Services Agreements between both companies on individual sites. As Doosan Skoda Power is an integral subsidiary of Doosan Enerbility, it shares the values of its parent company – namely innovation, integrity, co-operation, responsibility, and sustainability – which dovetail well with our own.

In 2011, Doosan Enerbility established its vision to achieve sustainable growth whilst operating an eco-friendly business and has been steadily implementing the plans for over a decade.



5.3 ACTING AS A RESPONSIBLE BUSINESS

REGULATORY COMPLIANCE AND OUR INTEGRATED MANAGEMENT SYSTEM (IMS)

The waste management sector is strictly regulated to minimise risk to public health and the environment.

All of our operational facilities must comply with environmental permits that are strictly governed through regular inspection at all phases of operation. These permits, as reflected within our reporting within the 'Environment' section of this Report, also require us to regularly report our performance against defined safe emission limits.

As a responsible business, we operate an Integrated Management System (IMS) that covers all of our operating sites and applies to all aspects of our operations and maintenance programmes. Bringing together our systems, processes, and standards into one unified framework helps improve performance and efficiency while establishing accountability and providing oversight to ensure compliance with our regulatory obligations. Failure to comply with legislation could result in health and safety issues, emissions exceedances, fines, or removal of our permission to operate entirely.

In 2023 our IMS was certified by Lloyd's Register Quality Assurance (LRQA), a recognised external body according to:

- ISO 9001:2015 for Quality Management;
- ISO 14001:2015 for Environmental Management; and
- ISO 45001:2018 for Occupational Health and Safety Management.

Our Rookery South and Newhurst facilities also underwent detailed certification audits in 2023, with Rookery South receiving triple ISO certification in July 2023 and Newhurst achieving the same in December 2023. Further detail on the work we completed is provided in the case study on page 77.

International Organization for Standardization ISO 9001

International Organization for Standardization ISO 14001

International Organization for Standardization ISO 45001

5.3 ACTING AS A RESPONSIBLE BUSINESS

PROMOTING OUR ROLE: TRADE ASSOCIATIONS AND MEMBERSHIPS

We also continue to promote the role of Energy from Waste as a contributor of essential social infrastructure with governments and other stakeholders through our membership of several industry groups and trade associations. This helps to ensure the development of policy to support decarbonisation, the circular economy and continued investment in Energy from Waste and related facilities.

OUR WORK WITH TRADE ASSOCIATIONS IN 2023 FOCUSED ON A NUMBER OF KEY THEMES:

- Working with the UK Government and our partners on the pragmatic and effective inclusion of Energy from Waste within the UK Emissions Trading Scheme (ETS) from 2028. We are committed to ensuring that the introduction of the policy delivers on its core decarbonisation aim of reducing overall CO_2 emissions by providing an economic incentive to change production, consumption, and recycling behaviours, whilst avoiding unintended impacts on our business and the wider waste hierarchy;
- Promoting measures to prevent both waste exports and landfill from becoming cheaper than Energy from Waste, which would result in a distortion of the waste hierarchy;
- Establishing the right commercial frameworks to drive investment in current and future carbon capture projects. As the lead emitter of the HyNet Northwest industrial decarbonisation cluster, we are aiming to deliver the first deployment of CCS technology in the UK's Energy from Waste sector and to establish commercial frameworks that are essential to addressing barriers to investment;
- The support required for the development of heat networks in the UK to catalyse decarbonisation of communities and industrial neighbours by replacing fossil fuel powered heating;
- Recognition of Energy from Waste's contribution to the green economy, for example by bringing critical waste infrastructure into the scope of the UK's upcoming National Infrastructure Assessment;
- Continuing to be strongly supportive of efforts to remove problematic materials, such as plastics, from residual waste streams and advocating for changes in policy and legislation to accelerate progress; and
- Advocating for further infrastructure that will enable the deployment of CCS technology across our fleet, aligned with the National Infrastructure Commission's proposed national CO_2 pipeline.

5.3 ACTING AS A RESPONSIBLE BUSINESS

OUR TRADE ASSOCIATION MEMBERSHIPS

UK

Trade Body	Role
Environmental Services Association (ESA)	The ESA is the trade body representing the UK's resource and waste management industry, focused on promoting the role of its members delivering a sustainable, low-carbon economy through its recycling, resources and waste management work
Resource Recovery UK (RRUK)	RRUK is the leading alliance for UK energy from waste operators. Its purpose is to promote the essential role of EfW in the UK's circular economy and to advocate its contribution to a greener, decarbonised future
Chartered Institute of Wastes Management (CIWM)	Founded in 1898, CIWM (the Chartered Institution of Wastes Management) is the leading professional membership organisation for individuals in the sustainability, resources and waste management sector
The carbon capture and Storage Association (CCSA)	The CCSA is the lead European association accelerating the commercial deployment of carbon capture, utilisation and storage (CCS) through advocacy and collaboration

IRELAND

Trade Body	Role
Irish Waste Management Association (IWMA)	The IWMA is a trade association for waste management companies in Ireland. All of its members work towards the Rules of the Association to ensure that they provide waste management services to the public and to businesses in a professional and ethical manner
Irish Business Employers Confederation (IBEC)	IBEC and its trade associations work with the Irish government, policymakers and other key stakeholders with evidenced-based policies designed to positively shape business conditions and drive economic growth

EUROPE

Trade Body	Role
European Waste Management Association (FEAD)	FEAD promotes the circular economy by representing Europe's private resource and waste management industry
Confederation of European Waste to Energy Plants (CEWEP)	CEWEP is the umbrella association of the operators of Waste-to-Energy plants, representing about 410 plants from 23 countries. Its members, including Encyclis, are committed to ensuring high environmental standards, achieving low emissions and maintaining state of the art energy production from remaining waste that cannot be recycled in a sustainable way

5.3 ACTING AS A RESPONSIBLE BUSINESS

MODERN SLAVERY

We also remain resolutely committed to trading ethically, sourcing responsibly and working to prevent modern slavery and human trafficking throughout our organisation and in our supply chain.

As a leader in the Energy from Waste industry, we recognise that we have a responsibility to take a robust approach to slavery and human trafficking. Our organisation is committed to preventing this, and to ensuring that our supply chains are free from slavery and human trafficking.

Our Modern Slavery Statement was updated and published on 1 May 2024. Our prevention work is split into four main themes as per the table.

We will continue to raise awareness of modern slavery across the organisation and in our supply chain during 2024, including through the work of our new Modern Slavery Working Group that will monitor the progress in implementing our procurement processes and practices.

Organisational structure and supply chains	We conduct an annual review of our activities that includes input from our HR, Procurement, Operations and Legal teams. A key focus is the construction of our facilities. Whilst the construction of our new plants is sub-contracted, our project managers ensure that construction meets the contractual terms and specifications which include anti-slavery protections and obligations to comply with the Modern Slavery Act 2015.
Policies	We have appropriate policies in place that underpin our commitment to ensure that there is no modern slavery or human trafficking in our supply chains or in any part of our business. These include our Whistleblowing Policy and our Employee Code of Conduct; we also only use specified, reputable employment agencies to source labour.
Due Diligence	We undertake due diligence when considering taking on new suppliers, and regularly review the performance of our existing suppliers. Our due diligence and reviews include: • Evaluating the modern slavery and human trafficking risks of each new supplier as part of the procurement process by way of a supplier due diligence questionnaire and other "Know Your Customer" checks; and • Taking steps to improve any substandard suppliers' practices, including providing advice to suppliers through and requiring them to implement action plans.
Training and awareness	In 2023, we undertook a modern slavery training workshop with our Purchasing Managers and HR professionals which extended the company's understanding of our legal and statement commitments and allowed us to review: • Our purchasing practices; • How we assess the risk of slavery and human trafficking in relation to various aspects of our business, including resources and support available; • How to identify the signs of slavery and human trafficking and what initial steps should be taken if slavery or human trafficking is suspected; and • How to escalate potential slavery or human trafficking issues to the relevant parties within our organisation and where to obtain external help and support on the issue.

GOVERNANCE CASE STUDY 1

SECURING TRIPLE ISO CERTIFICATION AT ROOKERY SOUTH ERF AND NEWHURST ERF

GOVERNANCE CASE STUDY 1

SECURING TRIPLE ISO CERTIFICATION AT ROOKERY SOUTH ERF AND NEWHURST ERF

Securing triple ISO certification for our Integrated Management System (IMS) at our Rookery South and Newhurst ERFs in 2023 followed months of detailed work by our Compliance team.

In response to the strict permitting system set by waste regulators, the development and implementation of the Encyclis IMS was based around a strategic purpose, set by the company's senior management, to achieve the following:

- Consistently high standards of health, safety and environmental stewardship on Encyclis' operational facilities;
- Legal compliance with our statutory obligations; and
- The detailed planning, management, co-ordination, and monitoring of all Operations & Maintenance (O&M) activities.

The delivery of this approach would in turn:

- Improve our consistency and approach to health, safety and environment matters across all Encyclis operational facilities;
- Ensure improved management of information; and
- Increase stakeholder confidence in our business.

The journey towards ISO certification started with an external ISO gap analysis audit in December 2022, prior to the completion of a Stage 1 Audit in February 2023. The Stage 1 audit covered all of the IMS fundamental requirements relating to the quality management, environmental and occupational health and safety standards.

No observations were raised as a result of this audit, enabling the business to progress to Stage 2 audit for full IMS certification at Rookery South ERF. This detailed audit took place over a six-day period in July 2023 totalling 54 hours of on-site auditing. This audit was more heavily focused around operational planning and control and included input from operations, maintenance, procurement, health & safety, environmental and senior management personnel. At the close out meeting the Lead Auditor from Lloyd's Register Quality Assurance (LRQA) concluded that Encyclis would be recommended for certification to all three relevant ISO standards:

- ISO 9001: 2015 for Quality Management;
- ISO 14001: 2015 for Environmental Management; and
- ISO 45001: 2018 for Occupational Health and Safety Management.

In December 2023, in line with the ISO certification objective for all operational facilities within the Encyclis fleet, a two-day change to approval audit was undertaken at Newhurst ERF, which also concluded that Encyclis would be recommended for certification to all three relevant ISO standards.

The development and implementation of the IMS is an ongoing process that is centred around 'plan, do, check and act' principles. Our focus in 2024 is on further enhancing the IMS, preparing for annual ISO surveillance audits at both Rookery South & Newhurst and progressing plans to include Dublin within the ISO scope of certification.

ISO 9001 ISO 14001 ISO 45001

IN DETAIL

Focus of work in 2023	IMS for both Rookery ERF and Newhurst ERF
Programme to achieve ISO certification	Development of IMS External ISO gap analysis Refinement of IMS in light of gap analysis Stage 1 & 2 audits Formal certification
Certifying body	Lloyd's Register Quality Assurance (LRQA)
Focus of work in 2024	Further enhancement of IMS at Rookery South & Newhurst Retention of triple ISO certification at Rookery South & Newhurst Continue to develop plans for Dublin ERF to be audited for triple ISO status

GOVERNANCE CASE STUDY 2

BUILDING KEY SUSTAINABILITY PRINCIPLES INTO OUR CONSTRUCTION CONTRACTS AT WALSALL

GOVERNANCE CASE STUDY 2

BUILDING KEY SUSTAINABILITY PRINCIPLES INTO OUR CONSTRUCTION CONTRACTS AT WALSALL

We recognise that alongside the need to run our facilities as efficiently as possible, we also have a responsibility to build our new facilities as efficiently as we can. We have therefore agreed to link the financing being used to build our new Energy Recovery Facility on Fryers Road in Walsall with two key sustainability commitments: the construction of a more energy efficient building; and enforcing stricter environmental performance during the build itself.

We reached financial close with our lenders to build the new R1-rated facility in December 2023, with Hitachi Zosen Inova (HZI) selected as principal contractor. HZI is a global leader in EfW engineering and the facility is being constructed under a turnkey engineering, procurement and construction (EPC) contract. Construction began in January 2024 and will take up to four years, with more than 300 people being employed, alongside a commitment to purchase goods and services locally where possible.

As per the financial terms agreed with our lenders, HZI will be required to work towards, and report against, a set of environmental measures designed to reduce the environmental impact of the build.

HZI is required to monitor and report monthly against the following four data requirements throughout Walsall ERF's construction programme:

PART 1: Materials and products data, covering the tonnages of steel, concrete, rebar and other products used throughout the build alongside their origin, mode of transportation and percentage of materials that are classified as recycled;

PART 2: Utilities consumption during the works on site, including:

- Towns water (m3);
- Electricity (MWh);
- Diesel (litres); and
- Other liquid fuels (litres);

PART 3: The number of operatives employed on site, the companies they work for and the travel distance from their permanent address (e.g. ≤10, 50, 100, 500 miles, >500 miles); and

PART 4: Site waste generation and management data on products including concrete and wood.

We subsequently review and challenge HZI's performance on a monthly basis to ensure we are building the facility in the most efficient way possible.

In addition, we require all subcontractors, at Request for Quotation stage, to state whether they can provide emissions associated with the manufacture and transportation (where not managed by Contractor) of their equipment to site, alongside a confirmation that this information will be provided to Encyclis, should this be requested.

IN DETAIL

Location	Walsall, West Midlands
Total capital investment	c.£500 million
Principal contractor	HZI
Timeline for construction	2024-2027
Scope of required data reporting	Four specific data sets are monitored to gauge both environmental sustainability and social value: **PART 1:** Materials and products data during lifecycle of build, covering tonnages, their origin, mode of transportation and percentage of products from recycled stock **PART 2:** Utilities consumption **PART 3:** The number of operatives employed on-site to confirm that we are using local labour PART 4: Site waste generation and management data
Requirements on sub-contractors	Confirmation at 'Request for Quotation' stage that emissions data on manufacture and/or transportation of equipment could be made available

6. OUR SUSTAINABILITY PROGRAMME FOR 2024 AND BEYOND

6. OUR SUSTAINABILITY PROGRAMME FOR 2024 AND BEYOND

Our sustainability programme for 2024 is an ambitious one, focused on making material progress across all three Environment, Social and Governance themes, whilst continuing to improve the reporting disclosures that we make as a business.

Our programme focuses on continuing to decarbonise our operations; supporting the circular economy; remaining a good neighbour in the areas we work; and maintaining our status as a leading employer.

As we emphasised in Section 3 on Environment, the only way to make a real change in our carbon emissions is to tackle the carbon in the waste we combust, given approximately 99% of our Scope 1 emissions come from it. Our work at the forefront of developing carbon capture and storage technology through our planned investment at Protos remains of critical importance both to the business and the wider waste management sector. We will continue to work closely with regulators and our supply chain to ensure that our facility secures planning consent working towards construction in 2025.

Across all of these activities, we recognise our need to work in partnership – thereby continuing our strong working relationships with our customers, our communities, our investors and both the UK and Irish Governments to help deliver a sustainable future. This is an essential part of creating the right business conditions for future sustainability-related investment to flourish.

Our progress will also be measured against a series of indicators across all three themes for the first time, as reflected in Section 7. This forms the basis for judging our future success, whilst also committing the business to make a series of additional disclosures in line with improving business transparency and accountability.

This report will be reviewed and published on an annual basis, reflecting our ongoing commitment to be *part of the solution towards net zero.*

ENVIRONMENT

Our overwhelming Environment focus for 2024 remains our ongoing investments in decarbonisation through carbon capture technology at commercial scale where possible, alongside operating our facilities in the most efficient way. This will be supplemented by our continued work in contributing to the circular economy.

BEING AT THE FOREFRONT OF THE COMMERCIAL DEPLOYMENT OF CARBON CAPTURE

Our principal focus will be on working towards the build of our first CCS facility at Protos from 2025. This includes working closely with Cheshire West & Chester Council for our planning application to be determined alongside our continued work with the Department of Energy Security & Net Zero (DESNZ) and the HyNet programme as a Track 1 CCS programme. We will also continue to work with our wider contracting team to ensure that we are in a position to mobilise on site, subject to planning determination, from early 2025.

We will undertake feasibility work to gauge where our future carbon capture investments should be made across the portfolio, assessing key considerations including land availability and the proximity of potential CO_2 distribution networks and end storage facilities.

MAKING SURE OUR NEW FACILITIES WORK EFFICIENTLY WHILST CONTINUING TO RESPONSIBLY BRING FORWARD OUR FACILITIES UNDER CONSTRUCTION

Aside from continuing to operate our facilities at Rookery South, Newhurst and Dublin as efficiently as possible, our new ERF at Earls Gate and our IBA processing facility at Wellingborough became operational in the first half of 2024; a key focus will be on these new facilities operating as efficiently and as safely as possible in line with our commitments in Sections 3 and 4 of this report.

Similarly, we will continue to assure the efficient and safe delivery of our ERFs under construction at Protos and Walsall.

INFLUENCING REYCLING RATES: REMOVING PLASTICS FROM THE RESIDUAL WASTE STREAM

We will also continue to work in partnership with our waste suppliers to reduce plastic content before residual waste arrives at our plants

PROGRESSING DISTRICT HEATING TO SUPPORT THE CIRCULAR ECONOMY

We will continue to progress plans for District Heating across our portfolio, including at Rookery South with Vital Energi; similarly, we are progressing district heating plans at Earls Gate during 2024 now that the facility is operational.

Our focus will then be on progressing schemes at Dublin (where a heat network scheme will be procured by Dublin City Council), Newhurst and Walsall.

EXPLORING AN IBA RECYCLING SOLUTION IN IRELAND

Our ability to recycle all IBA produced from our Rookery South and Newhurst ERFs means we are keen to secure a similar solution for IBA produced from our Dublin facility. In 2024, we have reached an interim on-island recovery solution in agreement with the EPA, and we are working towards a long-term solution which will feature in next year's report.

EXAMINING ALTERNATIVE START-UP FUELS

Our aim is to move towards the use of lower-carbon fuels to start up our facilities which will significantly reduce operational CO_2 emissions. Following a detailed review with our advisors in early 2024 on lower carbon alternatives to diesel, we will be trialling the use of Hydrogenated Vegetable Oil (HVO) fuel at Newhurst from Quarter 4 2024, to gauge the viability of applying this across all of our other facilities.

THE INTRODUCTION OF CLIMATE CHANGE RISK ASSESSMENTS FOR ALL SITES

Climate Change Adaptation is becoming increasingly critical to the business to allow us to remain in compliance with our environmental permit and other obligations and regulations. This year, we will begin to implement the frameworks and procedures to allow us to plan for an increased risk of climate change impact.

In 2024, we will implement specific risk assessments across our sites to comply with updated Environment Agency (EA) guidelines. We will be implementing a qualitative risk assessment and action plan to reflect the risk that climate change creates for our operations.

SOCIAL

Whilst a large proportion of our Social focus centred on personal safety through the promotion of our "Safety First" programme in 2023, we will be putting a greater focus on process safety through 2024, developing our apprenticeship programme and improving our Diversity, Equality and Inclusion (DE&I) governance and policies.

IMPROVING PROCESS SAFETY ACROSS THE PORTFOLIO

Our focus on improving process safety includes the development of Process Safety Performance Indicators for our ERFs – providing ongoing assurance that major hazard risks are being adequately controlled. Ultimately our chosen indicators will monitor the status of key systems and provide an early warning should controls deteriorate to an unacceptable level.

We will also improve our site induction process across the portfolio through its digitisation – thereby providing a consistent approach to what people can expect when visiting or working at any of our facilities.

DEVELOPMENT OF OUR PARTNERSHIP WITH LOUGHBOROUGH UNIVERSITY

Following the opening of the Newhurst ERF in May 2023, we are developing a strong relationship with Loughborough University, the town's largest employer, to demonstrate a clear path between their undergraduate programmes and potential future careers within the business. We will host a number of tours of our facility for Chemical Engineering students in 2024 and anticipate that our relationship will eventually provide both Research & Development opportunities and graduate secondments in future years.

RECRUITING MORE APPRENTICES

We continue to recognise the importance of welcoming new talent into our industry and developing the future engineering skills that the Energy from Waste sector will need. Following the success of the apprenticeship programme in Dublin, we intend to launch an apprenticeship programme at our UK sites from 2024.

Our Protos ERF, currently under construction, is particularly well placed to take on apprentices. In 2024 we will begin to engage with TTE Training, a leading provider of apprenticeships in the energy, engineering and manufacturing sectors in the North West, based locally to Protos in Ellesmere Port. Both our Operations Manager and our Maintenance Manager of Protos ERF completed apprenticeship programmes provided by TTE, reflecting their quality and relevance to the business.

CREATION OF DE&I COMMITTEE

In order to make our business more accessible, equitable and inclusive of all stakeholders and to increase engagement with different groups of staff, we are planning on launching our first employee Diversity, Equality and Inclusion Committee by the end of 2024. This Committee will directly report into the Sustainability Council. We expect that the group will help advise on further improving the diversity of the organisation, increase diversity awareness and support our talent pipelines.

GOVERNANCE

Our Governance focus for 2024 is focused on four key themes: continuing to make a positive contribution to policy making in the UK and Ireland; retaining our triple ISO certifications for our Integrated Management Systems at Rookery and Newhurst whilst planning for similar status for Dublin; investment in new digital systems to improve efficiency; and improving ESG-related disclosures, alongside establishing links to wider reporting frameworks.

MAKING A POSITIVE CONTRIBUTION TO POLICY MAKING

The inclusion of Energy from Waste in the UK Emissions Trading Scheme will be the biggest impact on our industry in a generation. Consultation on the ETS was formally launched in May 2024, immediately prior to the publication of this document.

To ensure that the policy delivers on its core objectives of reducing overall CO_2 emissions by providing an economic incentive to change production, consumption, and recycling behaviours whilst avoiding unintended impacts on our business and the waste hierarchy. We will work with our peers, trade associations and government in providing a thorough response to the consultation, with particular regard to the clarity of its methodology and the practicality of its timetable.

The 2024 Spring Budget announced a UK Landfill Tax increase for 2025/26 to better reflect actual RPI. Through the remainder of 2024, we will continue to advocate for policies that uphold the principles of the waste hierarchy and make landfill the least viable route for residual waste. We strongly support a municipal waste to landfill ban.

Our work with DESNZ on advocating for policies that underpin and support the rollout of CCS infrastructure within our sector will continue as a priority. Working with HyNet as the lead emitter and delivery partner of this key technology, it is essential that the right commercial frameworks exist with backing from Government to accelerate its eventual delivery across other parts of the UK. We will use our role within key trade associations to strongly advocate for a CCS investment pipeline within the UK, linked to our continued investment in ERFs.

WIDENING TRIPLE ISO CERTIFICATION FOR OUR IMS ACROSS THE BUSINESS

The development and implementation of the IMS is an ongoing process that is centred around plan, do, check and act principles. Our focus in 2024 is on further enhancing the IMS, preparing for annual ISO surveillance audits at both Rookery South and Newhurst in order to retain our triple ISO certification at both sites and progressing plans to include Dublin within the ISO scope of certification.

INVESTING IN NEW TECHNOLOGY

A digitisation programme was initially formed in 2022 to set up standalone Encyclis business systems (following the sale of the business from Covanta) with the goal of designing and implementing systems to support our existing ways of working. We are continuing to invest in digitisation and in 2024 we will focus on refining our end-to-end business systems to further improve operational performance.

IMPROVING OUR DISCLOSURES

Finally, we will formalise our links to wider reporting frameworks in 2024 to benefit from their guidance in evolving our approach to Sustainability. This includes evaluating appropriate external reporting standards we will work towards from 2025.

We will also collect and report against all of the measures within **Section 7 of this report**.

7. MONITORING OUR PERFORMANCE: DATA TABLES

Our future progress will also be judged against a series of key Sustainability measures, broken down by theme and sub-theme to enhance the transparency of our disclosures as a business.

2023 was the baseline year for the business, with our performance reflected in the tables on the following pages. Data that was available for our two operational assets at the time was published in the 2022 Sustainability Review, available to view on the Encyclis website. We are using 2023 as our baseline, as the range of data is more comprehensive and includes a full scope of emissions for the three operational plants and our London Head Office.

These measures will be reported to our Sustainability Committee and Sustainability Council on a quarterly basis to maintain oversight and to drive appropriate action. We will also continue to disclose our progress against these measures via this Report on an annual basis.

ENVIRONMENTAL

MINIMISING EMISSIONS AND BEING EFFICIENT IN OUR OPERATIONS

PAGE REF	MEASURE	PURPOSE	2023 PERFORMANCE
ENTIRE PORTFOLIO			
p22	Total emissions (tCO_2e) across Scope 1 to 3	Reflects total CO_2e emitted across our operational portfolio (in accordance with GHG protocol)	744,607 tonnes
p22	Carbon intensity across entire operational portfolio (excluding Biogenic)	Reflects total greenhouse gas emissions across the entire operational portfolio	0.52
N/A	Total tonnes of carbon abated through CCS technology	Provides total tonnes of carbon removed from the atmosphere via Encyclis' CCS technology	N/A – first carbon capture Facility currently subject of planning application
ROOKERY SOUTH ERF			
p22	Total emissions (tCO_2e) across Scope 1 to 3	Reflects total CO_2e emitted by the facility (in accordance with GHG protocol)	294,778 tonnes
N/A	R1 Energy efficiency factor of facility	Reflects the energy efficiency of the facility	0.87
p37	Water usage (m3)	Provides the total volume of water used by the facility in 2023	73,882 m3

PAGE REF	MEASURE	PURPOSE	2023 PERFORMANCE
NEWHURST ERF			
p22	Total emissions (tCO_2e) across Scope 1 to 3	Reflects total CO_2e emitted by the facility (in accordance with GHG protocol)	120,199 tonnes (End of May – End of December)
N/A	R1 Energy efficiency factor of facility	Reflects the energy efficiency of the facility	0.90
p37	Water usage (m3)	Provides the total volume of water used by the facility in 2023	16,685 m3
DUBLIN WASTE TO ENERGY			
p22	Total emissions (tCO_2e) across Scope 1 to 3	Reflects total CO_2e emitted by the facility (in accordance with GHG protocol)	328,899 tonnes
N/A	Energy efficiency factor of facility	Reflects the energy efficiency of the facility	80.1
p37	Water usage (m3)	Provides the total volume of water used by the facility in 2023	252,382 m3

7. MONITORING OUR PERFORMANCE

SUPPORTING THE CIRCULAR ECONOMY

PAGE REF	MEASURE	PURPOSE	2023 PERFORMANCE
ROOKERY SOUTH ERF			
p30	% of IBA of waste processed	Demonstration of material recovery from the treatment of residual waste for future uses	20%
p30	% of IBA generated that is recycled		100%
NEWHURST ERF			
p30	% of IBA of waste processed	Demonstration of material recovery from the treatment of residual waste for future uses	18%
p30	% of IBA generated that is recycled		100%
DUBLIN WASTE TO ENERGY			
p30	% of IBA of waste processed	Demonstration of material recovery from the treatment of residual waste for future uses	17.5%

CLIMATE CHANGE ADAPTATION

PAGE REF	MEASURE	PURPOSE	2023 PERFORMANCE
N/A	Climate change risk assessment to be conducted at each operational site	Provides a list of risks and opportunities, site by site, for Encyclis to respond to the effects of Climate Change	N/A – new measure for 2024

7. MONITORING OUR PERFORMANCE

BEING A GOOD NEIGHBOUR IN THE COMMUNITIES WE OPERATE

PAGE REF	MEASURE: Emissions (Daily Average)	PURPOSE	2023 PERFORMANCE
ROOKERY SOUTH ERF			
Forms part of p36	% below ELVs: Nitrogen Dioxide	Demonstrates the percentage below the key air quality parameters that each operational facility has achieved	7%
	% below ELVs: Carbon Monoxide		98%
	% below ELVs: Sulphur Dioxide		89%
	% below ELVs: Hydrogen Chloride		67%
	% below ELVs: Total Organic Carbon		97%
	% below ELVs: Particulate Matter		99%
NEWHURST ERF			
Forms part of p36	% below ELVs: Nitrogen Dioxide	Key air quality parameters that each operational facility needs to remain below	14%
	% below ELVs: Carbon Monoxide		95%
	% below ELVs: Sulphur Dioxide		94%
	% below ELVs: Hydrogen Chloride		29%
	% below ELVs: Total Organic Carbon		99%
	% below ELVs: Particulate Matter		99%

PAGE REF	MEASURE: Emissions (Daily Average)	PURPOSE	2023 PERFORMANCE
DUBLIN WASTE TO ENERGY			
Forms part of p36	% below ELVs: Nitrogen Dioxide	Key air quality parameters that each operational facility needs to remain below	34%
	% below ELVs: Carbon Monoxide		72%
	% below ELVs: Sulphur Dioxide		95%
	% below ELVs: Hydrogen Chloride		99%
	% below ELVs: Total Organic Carbon		95%
	% below ELVs: Particulate Matter		91%

SOCIAL

PROMOTING AND DELIVERING A SAFETY-FIRST CULTURE

PAGE REF	MEASURE	PURPOSE	2023 PERFORMANCE
p48	UK facilities: Total number of RIDDOR & lost time injury incidents in a single year	Proof point of 'Safety First culture' being enacted; all high potential near misses and incidents are investigated to determine the root cause(s) and provide lessons learned across all facilities	0 (zero) incidents
p48	Irish facilities: Total number of reportable incidents & lost time injury incidents in a single year		3 incidents

HAVING A POSITIVE EFFECT ON LOCAL COMMUNITIES

PAGE REF	MEASURE	PURPOSE	2023 PERFORMANCE
p53 & p59	Total number of visitors undertaking supervised tours of our facilities	Educates stakeholders on the ESG-related work of the company	2,252 visitors at Dublin and Rookery South

AN EMPLOYER OF CHOICE

PAGE REF	MEASURE	PURPOSE	2023 PERFORMANCE
p50	Total number of apprentices employed	Provides evidence of the business developing its future workforce	2 apprentices (Dublin)
p51	Gender split across the workforce	Addresses traditional male dominance of industry	78% Male 22% Female
p51	% of staff recommending Encyclis as a great place to work	Key indicator of staff happiness within the business	78%
p51	% of workforce taking up EV salary sacrifice scheme	Reflection of Encyclis supporting environmental outcomes through its HR policies	21%

GOVERNANCE

EFFECTIVELY OVERSEEING & MANAGING SUSTAINABILITY

PAGE REF	MEASURE	PURPOSE	2023 PERFORMANCE
p63	Publication of Sustainability Report on an annual basis, alongside commitment to increased disclosures for all three key themes	Maintenance of Board oversight across all key ESG issues	Report published in July 2023
p15	Biennial review of materiality assessment		Materiality Assessment formed part of July 2023 publication
p63	Sustainability Council to continue to meet on a quarterly basis, including once a year in person		Council met on a quarterly basis

BUSINESS RESILIENCE & RISK MANAGEMENT

PAGE REF	MEASURE	PURPOSE	2023 PERFORMANCE
p63	Continue to consider environmental, social and governance opportunities and risks in all presentations, proposals and business cases put to the Board	Maintenance of Board oversight across all key ESG issues	All papers put to Board in 2023 included ESG considerations

ACTING AS A RESPONSIBLE BUSINESS

PAGE REF	MEASURE	PURPOSE	2023 PERFORMANCE
p78	Triple ISO certification in place for IMS at Rookery South ERF	Securing ISO certifications (ISO 9001:2015 for Quality Management; ISO 14001:2015 for Environmental Management; and ISO 45001:2018 for Occupational Health and Safety Management) reflects a consistently high standard of health, safety and environmental stewardship on Encyclis' operational facilities	Triple ISO certification secured
p78	Triple ISO certification in place for IMS at Newhurst ERF		Triple ISO certification secured
N/A	Triple ISO certification in place for IMS at Dublin Waste to Energy		N/A

8. OWNERSHIP OF OUR FACILITIES

OWNERSHIP OF OUR FACILITIES

FACILITY	ENCYCLIS OWNERSHIP	STATUS
Dublin waste to energy facility ("Dublin")	**50%** Dublin Waste to Energy Limited is a joint venture between Encyclis and DIF (Dalmatia WtE EUR Holdings Limited) (50:50)	Operational
Rookery South energy recovery facility ("Rookery")	**80%** Rookery South Limited is a controlling interest partnership between Encyclis and Veolia (80:20)	Operational
Newhurst energy recovery facility ("Newhurst")	**50%** Newhurst ERF Limited is a joint venture between Encyclis and Biffa (50:50)	Operational
Protos energy recovery facility ("Protos")	**75%** Protos ERF Limited is a joint venture between Encyclis and Biffa (75:25)	Under construction
Earls Gate energy recovery facility ("Earls Gate")	**50%** Earls Gate Energy Centre Limited is a joint venture between Encyclis and Brockwell Energy Ltd (50:50)	Became operational in 2024
Walsall energy recovery facility ("Walsall")	**100%**	Under construction
Wellingborough incinerator bottom ash facility ("Wellingborough")	**100%**	Became operational in 2024

9. GLOSSARY OF TERMS

9. GLOSSARY OF TERMS

APCr – Air Pollution Control Residue
Typically, a mixture of ash, carbon, and lime. It is a hazardous waste.

BREF Limits – Best Available Technique Reference Document
A publication resulting from a series of information exchanges between various stakeholders, including regulators, industry and environmental non-governmental organisations. These contain guidance on the "Best Available Techniques" for installations.

BAT – Best Available Techniques
An available technique (technology or process) which is the best for preventing or minimising emissions and impacts on the environment. BATs are used by legislators or regulators to set emission limits for compliance with environmental permits.

C&I – Commercial and Industrial
Solid waste derived from commercial and industrial sources.

CCS – Carbon Capture and Storage
Refers to a suite of technologies that can play a diverse role in meeting global energy and climate goals.

CEMS – Continuous Emissions Monitoring Systems
An integrated system used to measure and report emissions continuously in order to comply with Environmental Permits.

CEWEP – Confederation of European Waste to Energy Plants

CIWM – Chartered Institute of Waste Management

CV – Calorific Value
A measurement of the amount of energy contained in waste.

DMA – Double Materiality Assessment
An assessment of the sustainability matters that are financially material in influencing business value and material to the market, environment, and people.

EBITDA – Earnings before interest, taxes, depreciation, and amortisation.

EfW – Energy from Waste
The process of generating energy in the form of electricity and/or heat from the primary treatment of waste, or the processing of waste into a fuel source.

ELV – Emission Limit Value
Emission limit values are specific thresholds or boundaries established for different types of equipment, regulating and controlling the amount of emissions that are allowed to be released into the environment in line with operational permits.

EN 14181
Specifies procedures for establishing quality assurance levels QAL 2, QAL 3 and AST for an AMS installed on industrial plants for the determination of the flue gas components and other flue gas parameters.

ESG – Environmental, Social and Governance
Used to screen investments based on co-operative policies and to encourage companies to act responsibly.

ESA – Environmental Services Association

FEAD – European Waste Management Association

GHG – Greenhouse Gas
Greenhouse gases constitute a group of gases contributing to global warming and climate change.

Greenwashing
A term used to describe a false, misleading, or untrue action or set of claims made by an organisation about the positive impact that a company, product, or service has on the environment.

HBM – Hydraulically Bound Mixtures
A mixture of aggregate, water, and hydraulic binder, most commonly used in pavement sub-base layers where cement treated bases or cement bound materials have traditionally been used.

R1 Classified Energy Recovery Facility
Defined within the Waste Framework Directive as "any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function." Plants that do not reach the minimum standard are classified as waste disposal facilities.

IBA – Incinerator Bottom Ash
Material that is discharged from the moving grate of municipal solid waste incinerators.

IBEC – Irish Business Employers Confederation

IMS – Integrated Management System
Combines all aspects of an organisation's systems, processes and standards into one smart system.

ISO standards
Internationally recognised standards that set guidelines to result in a safer, more consistent end result that benefits both the organisation and end user/customer. Three ISO standards specifically relate to Encyclis.

9001
Specifies requirements for a quality management system. Used to demonstrate the ability to consistently provide products and services that meet customer and regulatory requirements.

14001
Sets out the requirements for an environmental management system. It helps organisations improve their environmental performance through efficient use of resources and reduction of waste, gaining a competitive advantage and the trust of stakeholders.

45001
Specific requirements of an occupational health and safety management system. It provides guidance for its use, enabling organisations to provide safe and healthy workplaces by preventing work-related injury and ill health and proactively improving occupational health and safety.

IWMA – Irish Waste Management Association

KPIs – Key Performance Indicators
A quantifiable measure of performance over time for a specific objective.

M-LS – Manufactured Limestone

Net Zero
A state in which the greenhouse gases going into the atmosphere are balanced by removal out of the atmosphere.

NGO – Non-Governmental Organisations
Typically, a voluntary group or institution with a social mission which operates independently from the Government.

RHI – Renewable Heat Incentive
A government financial incentive to promote the use of renewable heat, which can help reduce carbon emissions and meet the UK's renewable energy targets.

RWS – Resources and Waste Strategy
Sets out how we will preserve material resources by minimising waste, promoting resource efficiency and moving towards a circular economy in England.

SDG – Sustainable Development Goals
Goals adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet and ensure that by 2023 all people enjoy peace and prosperity.

UK ETS – UK Emissions Trading Scheme
A cap and trade system which caps the total level of GHG emissions, creating a carbon market with a carbon price signal to incentivise decarbonisation.

UNGC – United Nations Global Compact
A framework that requires businesses worldwide to adopt sustainable and socially responsible policies, and to report on their implementation.

2023

SUSTAINABILITY REPORT

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