



Nurturing Growth

SUSTAINABILITY REPORT 2022



Contents

INTRODUCTION 3

- CEO message 3
- Overview 5
- Strategic geographic location 6
- Our purpose, drivers and sustainability priorities 7
- Sustainability performance highlights 2022 9

OUR SUSTAINABILITY APPROACH 10

- Board leadership 11
- Stakeholder engagement 13
- Materiality 15
- UN Sustainable Development Goals 18

OUR STRATEGY: NURTURING GROWTH 20

NURTURING OUR ENVIRONMENT 21

Overview 22

- The Business We Do – sustainable food production** 23
 - Our role 23
 - Soil resilience strategy 24
 - Soil resilience and plant nutrition 25
 - Optimising productivity – nitrogen use efficiency 26
 - Digital innovation 28
 - Innovative and integrated plant protection 30
 - BioSolutions and beyond 31

The Business We Do – supporting outdoor space regeneration 34

- Amenity solutions – carbon sequestration 35
- Amenity solutions – green roofs 36

Enhancing Biodiversity and Protecting Natural Capital 37

- Biodiversity through sustainable agronomy and BioSolutions 37
- Wildlife Corridors 37
- Tree Protection 38

How We Do Business – our operations 40

- Environmental Management system 40
- FY2022 performance 40

Climate Change 41

- Commitment to Science-Based Targets initiative 41
- Scope 3 assessment 43

Reducing Water Usage and Water Stress 44

- Water use efficiency 45
- Sprayer operator training 45

Waste Reduction 46

- Waste to landfill 46
- Plastics and packaging 46

Collaboration and Comprehensive Research 47

- Yen Zero 47
- Field of the Future 48

NURTURING OUR SOCIETY 49

Introduction 50

Empowering our people 52

- Integrated Group people strategy 52
- Employee engagement 55

Implementing our Health, Safety and Well-being Roadmap 57

- Health and safety performance 58
- Diversity, equality and inclusion 62
- Hybrid working principles 64

Sustainable Land Use 66

Local Community Engagement 67

HOW WE ORGANISE FOR IMPACT 69

ESG Governance Framework 70

- Conducting business with integrity 70
- Origin code of Conduct 70
 - Anti-bribery and corruption
 - People
 - Human rights and Labour
 - Wage and hour practices
 - Discrimination and harassment
 - Freedom of association
 - Data protection
 - Community relations
- Supplier code of Conduct 71

Reporting and Transparency 72

- EU Non-Financial Disclosure Directive 72
- Taskforce on Climate-related Financial Disclosures 73
- Ratings 73



CEO Message



Welcome to our 2022 Group Sustainability Report.

Last year we announced our long-term sustainability strategy to 2030 – Nurturing Growth – which draws together the Group’s environmental, social and governance ambitions and reflects the Origin core values - People, Partnerships, Innovation, Integrity and Community.

With the support of our Board, who have given us a clear mandate, in 2022 we strengthened the foundation of our ‘Nurturing Growth’ strategy. Central to this was informing our decisions by continuing to engage with our stakeholders through a ‘Pulse Check’ of their views. To ensure our progress is measurable and understood, we identified the right goals and metrics and we also established effective reporting across the Group.

The Covid-19 pandemic and the war in Ukraine have tested the resilience of our people and highlighted the susceptibility of the global food system to supply and price shocks. Providing safe, nutritious food to a growing population cannot be achieved without also driving positive environmental outcomes, fostering equality, diversity and inclusion, and supporting the ongoing sustainable production efforts of the farmers, growers and amenity professionals we serve.

Origin supports the ten principles of the United Nations Global Compact (UNGC) on human rights, labour, environment and anti-corruption. We are committed to continuing to use the UNGC and its principles, making it part of our strategy, culture and day-to-day operations. We are also committed to engaging in collaborative projects which advance the broader development goals of the United Nations, particularly the Sustainable Development Goals (SDGs).

Our level of employee engagement outperforms the sector average, (89% favourable score) with significant improvements, 83–85%, across Diversity and Inclusion, My Manager, Teamwork and Collaboration

The future of food

Agriculture plays a crucial role in providing safe food that meets the nutritional requirements of the world’s growing population. In meeting these needs, increasing productivity on existing agricultural land will be crucial to meeting the growing demand for safe, nutritious food. Origin is well positioned to play a meaningful role in supporting the transition to more sustainable land use in the agriculture, amenity, landscaping and ecology markets where we operate.

In this regard, our principal areas of focus are:

- > Building and maintaining customer-centric, market-leading business models in provision of technical advice and integrated solutions to deliver value add solutions that improve efficiencies.
- > Transitioning our product and services portfolio to optimise yields sustainably with specific focus on BioSolutions, speciality nutrition technologies and digital technologies
- > Accelerating Origin’s participation in environmental and ecological markets within and beyond agriculture.

To support this approach, in FY2022 we created a set of Key Performance Indicators (KPIs) focused on soil health, nutrient use efficiency and biodiversity, which will be aided by innovation, data analytics and partnerships and be grounded in science.

Environmental impacts approach

We continue to adopt a strategic approach to reduce our environmental impacts on air, land and water. During the year, we commenced the development of a formal Environmental Management System aligned to the ISO14001 standard. This is being adopted in all Irish and UK business units initially and will be extended across the rest of the Group’s operations in a phased approach.



With the drive for more sustainable food systems and the pressing need to reduce the environmental footprint of our food, we believe sustainability is the roadmap to security, stability, and progress.



Our ambitious environmental targets will be aided by innovation, data analytics and partnerships and be grounded in science.

In November 2021 I signed a letter of commitment on behalf of the Group, to begin the process of setting Science Based Targets (SBTs) for Origin. Our targets are under development pending validation and we are committed to building a path towards a Low Carbon Plan. Setting SBTs will ensure that we continue to track the progress of the emission reduction activities in our operations, as well as supporting us when engaging with our supply chain partners to help decarbonise our value chain.

In addition to ongoing initiatives, we conducted an extensive project to identify potential climate related risks and opportunities, which continues to inform our approach in adopting the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations.

Focus on our People

I am pleased to report solid progress with our People Strategy in 2022. The results of our employee opinion survey show a continuing positive trend across the 13 categories which we use to measure our employee experience, with strong gains since 2021. Importantly, we maintained a high level of employee engagement, an essential measure of our progress and we have seen significant improvements in the Diversity and Inclusion, Manager Effectiveness, and Teamwork and Collaboration categories. Overall, there is a strong sense of inclusion across the Group and we continue to build on the strong team culture that already exists within the business. In support of our long-term People Strategy, during the year we also developed measurable KPIs and targets for Health and Safety and Diversity and Inclusion.

Listening to our stakeholders

Origin undertook its first Materiality exercise with stakeholders in 2019 and is committed to a formal review every four years. Recognising the rapid pace at which environmental and social themes are evolving within the agriculture and amenity sectors, we undertook a materiality Pulse Check in July 2022. This reinforced our material themes and identified a new theme 'enabling people and communities', which we have now integrated into our business strategy. We will undertake a full materiality assessment refresh in 2023, with the output informing our approach going forward.

Sustainability is fundamental to Origin's business model and future growth. At our Capital Markets Day, we outlined our ambition to optimise the sustainable use of land through innovation and integrated solutions. In recognition of our potential to positively contribute to addressing global environmental challenges, we have aligned our strategic priorities to focus on a model of sustainable land use that underpins food security, combats climate change, and restores biodiversity and ecosystem services. In line with our strategy to broaden Origin's offering within the emerging nature economy, in March we announced the acquisition of Envirofield Limited in the UK, an expert independent field-trials company specialising in agricultural and environmental research. More recently, in October we announced the acquisition of Keystone Environmental Limited, a UK-based ecology solutions provider specialising in the design, planning and delivery of complete ecological solutions. These acquisitions strengthen our services in sustainable land use and will improve our environmental impact through the research, development and delivery of innovative solutions.

We are supporting our corporate strategy through our ambitious Nurturing Growth plan, built on innovation and integrated solutions. Our people are central to the delivery of this strategy. I want to thank all of our colleagues across the Group for their ongoing commitment to 'The Origin Way' and also our customers and partners for their continued support as we seek to make our business more sustainable.

Yours sincerely,

Sean Coyle
Chief Executive Officer

Overview

Origin Enterprises plc is an international Agronomy-Services group, providing specialist advice, inputs and digital solutions to promote sustainable land use.



Our Brands



Our Offer

Products	Advisory	Services
Plant Protection Products	Agronomy	Digital
Seed	Turf Agronomy	Laboratory
Crop Nutrition	Environmental	Trials
Biologicals	Urban Greening	Training
Green Infrastructure Solutions		
Feed		

Our Channels

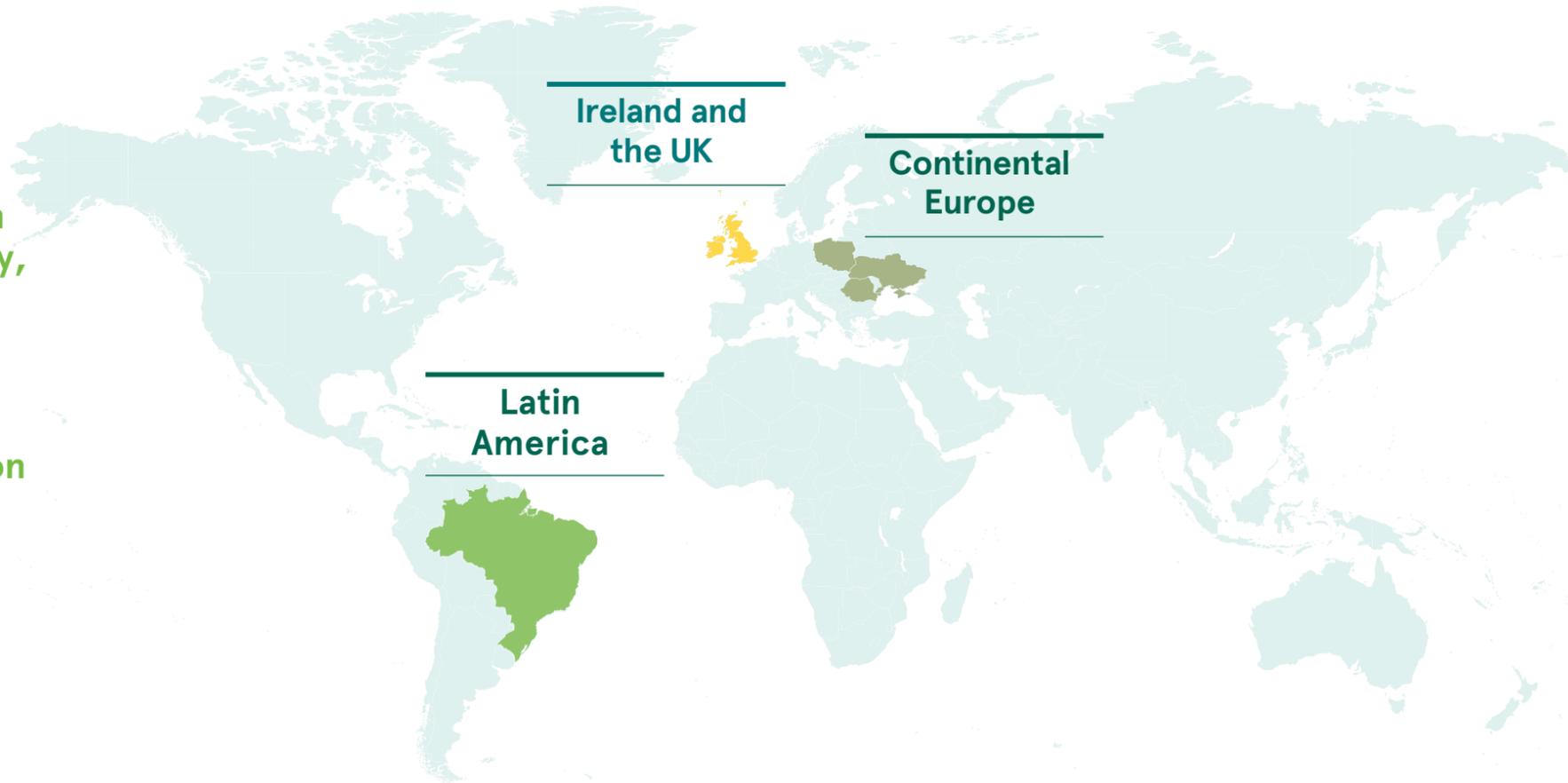
Business-to-Business
Agronomists
Direct-to-Channel

Our End Users

Farmers and Growers
Amenity Professionals and Landscapers

Strategic Geographic Locations

We operate in partnership with over 48,000 farmers, growers and professionals in agriculture, amenity, landscaping and ecology markets to help them optimise crop yield and economic returns on a sustainable basis.



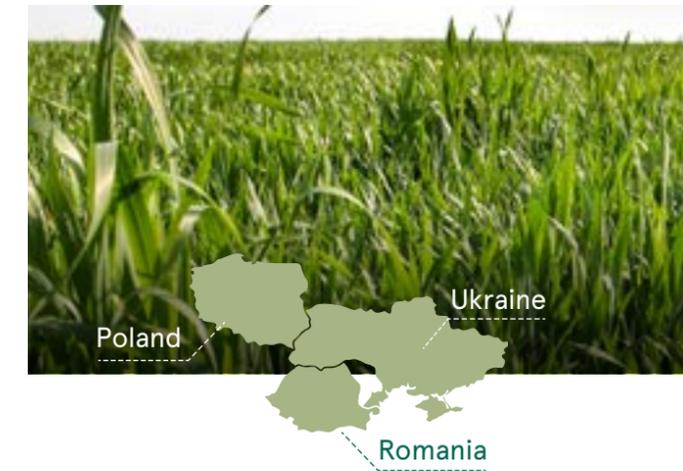
Ireland and the UK

Origin has leading positions in the UK Integrated Agronomy Services market, the Irish and UK Fertiliser and Speciality Nutrition markets and the UK Amenity Inputs market.



Continental Europe

Origin is a recognised market leader in the provision of Agronomy Services and Crop Inputs in our Continental European markets.



Latin America

Origin has a controlling interest in Fortgreen. Based in Paraná State, Brazil, Fortgreen is an established leader in the development and marketing of value-added crop nutrition and speciality inputs.



6

Countries



92

Demonstration Farms



32

Input Formulation and Processing Facilities



99

Distribution Points



2,643

Employees



55,000

Crop Field Trials

Our purpose, drivers and sustainability priorities

As global and national agendas review the impact of agriculture and land use on the environment and climate change, we have identified the optimisation of sustainable land use as our overarching objective.

Our purpose

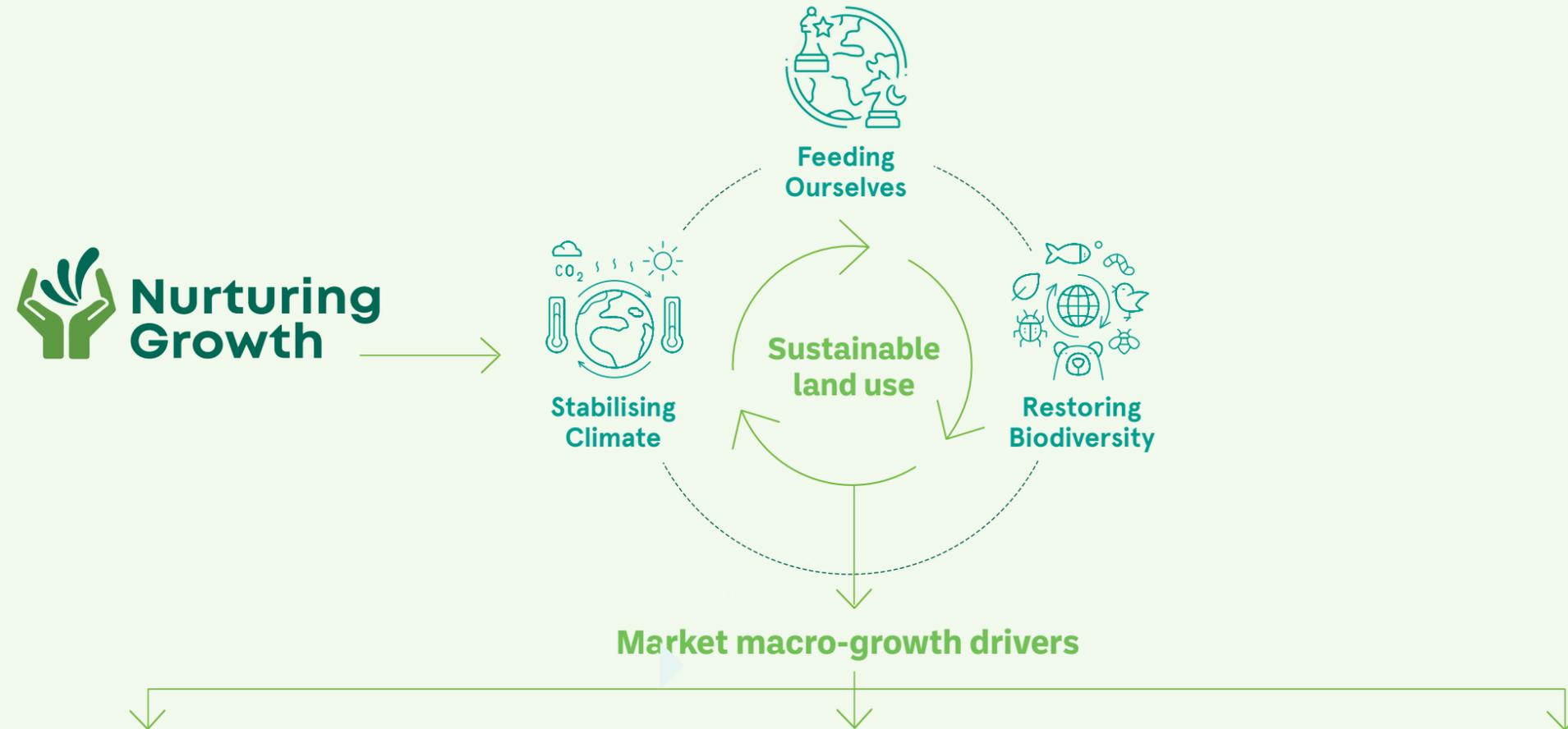
To optimise the sustainable use of land through innovation and integrated solutions

Our vision

To be the leading and trusted partner of choice for growers, farmers and professionals in agriculture, amenity, landscaping and ecology markets

Our strategic priorities

We have aligned our strategic priorities to focus on a model of sustainable land use that underpins food security, combats climate change and restores biodiversity and ecosystem services. Our business model responds to three macro-growth drivers in our markets: Sustainable Agronomy, Global Food Supply Responsiveness and Emerging Nature Economy



Sustainable Agronomy



Our sustainable agronomy approach is built on Origin's strong heritage of providing market leading technical advice and solutions to growers and professionals across agriculture and amenity markets. Our offering is delivered through four strategic pillars for action:

- > Balancing sustainability and outputs
- > Soil resilience and plant nutrition
- > Innovative and integrated plant protection
- > Enhancing biodiversity and protecting natural capital.

Utilising our digital agronomy capabilities, we will continue to harness data and emerging technologies to deliver value-added solutions that improve efficiencies across all four pillars.

Global Food Supply Responsiveness



We recognise the necessity to adopt new technologies and innovative tools and practices, in order to meet the growing global demand for food in the coming decades. Our approach to global food supply responsiveness focuses on closing yield gaps and creating efficiencies within agricultural production systems that support the goal to eradicate food insecurity.

Integration of new products and solutions into our portfolios across existing markets is central to our objective as we support the transition from legacy plant protection portfolios to biosolutions and specialty nutrition product technologies focused on yield optimisation.

Emerging Nature Economy



Natural assets are highly beneficial to the economy and society – from agriculture and forestry to leisure and tourism. In recognition of the need to protect the environment and preserve key habitats, we are adopting an approach to promoting sustainable land management, that aims to leave the natural environment in a measurably better state than it was beforehand.

In addition to augmenting our existing offering within our agriculture and amenity markets, we plan to accelerate investment in products and services that enhance environmental and ecological benefits across all sustainable land use markets.

This chart shows how we have organised to reflect the interdependence of our environmental and societal ambitions and the cohesion across The Business We Do, How We Do Business and How We Organise for Impact, to deliver our Nurturing Growth Strategy.

Macro-Growth Drivers



Sustainable Agronomy



Global Food Supply Responsiveness



Emerging Nature Economy

The Business We Do

How We Do Business

How We Organise for Impact

Nurturing Our Environment

Nurturing Our Society

Our approach

Integrated whole-of-operation solutions in farming, amenity and development land, that balance sustainability with productivity

- > Improving agronomic approaches
- > Enhancing soil health and resilience
- > Improving input efficiency
- > Improving biodiversity
- > Addressing climate change
- > Protecting water quality
- > Reducing water consumption

Resource efficiency and environmental impact

Empowering our people and our communities

Conducting business with integrity

Governance and reporting

Levers

Innovation across Origin portfolios in

Operational excellence

Employee Engagement

Code of conduct

> Stakeholder engagement

Products

- > Enhanced efficiency fertilisers
- > BioSolutions
- > Micro-nutrients
- > Seeds
- > Green infrastructure solutions

Services

- > Advanced agricultural software
- > Soil health and resilience
- > Crop spraying
- > Lime application
- > Field trials
- > Ecology consultancy

Advisory

- > Sustainable agronomy
- > Integrated nutrient management planning
- > Integrated pest management
- > Precision agriculture

Climate Change

- > Scope 1-3 GHG emissions
- > Net zero emissions by 2050

Water

- > Protect water quality
- > Reduce consumption

Waste

- > Reduce use of virgin plastics
- > Divert waste from landfill

> 'Let's Talk' programme

- > Employee experience
- > Engagement performance

Diversity, equality and inclusivity

- > Culture programme
- > Increased female representation

Health, Safety and Wellbeing

- > Cross-group HSW forum
- > Minimised risk and a reduction in the number of accidents

Community empowerment

Product innovation towards zero hunger

> Anti-bribery and corruption

- > People
- > Human rights and Labour
- > Wage and hour practices
- > Discrimination and harassment

> Freedom of association

- > Data protection
- > Community relations

Supplier Code of Conduct

- > ESG committee
- > Sustainability steering committee
- > Measurement
- > Targets

External rating

- > Sustainalytics
- > MSCI
- > CDP

Sustainability Performance Highlights 2022

Nurturing Our Environment

8.8%

absolute CO₂ emissions reduction since 2017

20%

target to increase crop Nitrogen Use Efficiency by 2030

13%

Agrii UK Van Fleet fully electric
Targets set to increase to 25% in 2023

1,000 miles

of wildlife corridors by 2030

Nurturing Our Society

89%

employee survey engagement score

84%

favourable diversity and inclusion category score

Lost Time Incident Rate

13.8

incidents per 1,000 employees

30% by 2030

female representation in management/leadership

How We Organise For Impact

38%

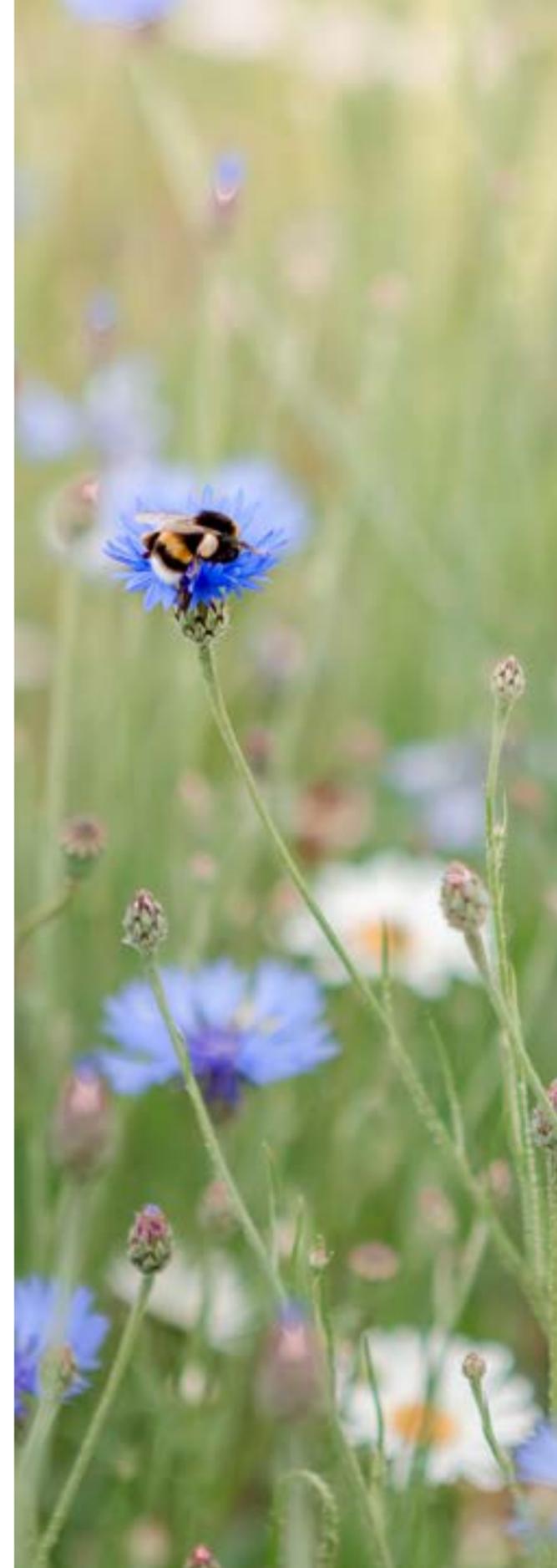
female Board membership

Materiality

‘Pulse Check’



Ecosystems and sustainable land use are core to addressing our global crises. We have aligned our strategic priorities to focus on a model of sustainable land use that underpins food security, combats climate change and restores biodiversity and ecosystem services.



01 OUR SUSTAINABILITY APPROACH



Skelton Lakes Services
Leeds, West Yorkshire

Board Leadership

How we approached sustainability in 2022

In 2022 we strengthened the foundation of our Nurturing Growth Strategy through:

- > Establishing a Sustainability and Innovation Group with reporting channels to and from our Board (via the Executives and the ESG Committee) and across our business units
- > Continuing to engage with our stakeholders (team members, our Board and customers) in a materiality "Pulse Check" that led us to adjust our material themes
- > Identifying KPIs that will deliver against our material themes and our selected UN Sustainable Development Goals.

The Board has overall responsibility for management of risk management and internal control systems, including climate change risks.

In 2021, the Board established an Environmental, Social and Governance (ESG) Committee as part of the drive to integrate sustainability into our way of operating and our decision-making, and to embed a strong culture in support of ESG best practice.

The Committee is made up of four Non-Executive Directors, who represent the Board in defining the Group's ESG strategy and support, challenge and oversee the Group's development, implementation and long-term evolution of policies, programmes, practices, targets and initiatives relating to ESG matters.

Executive Team

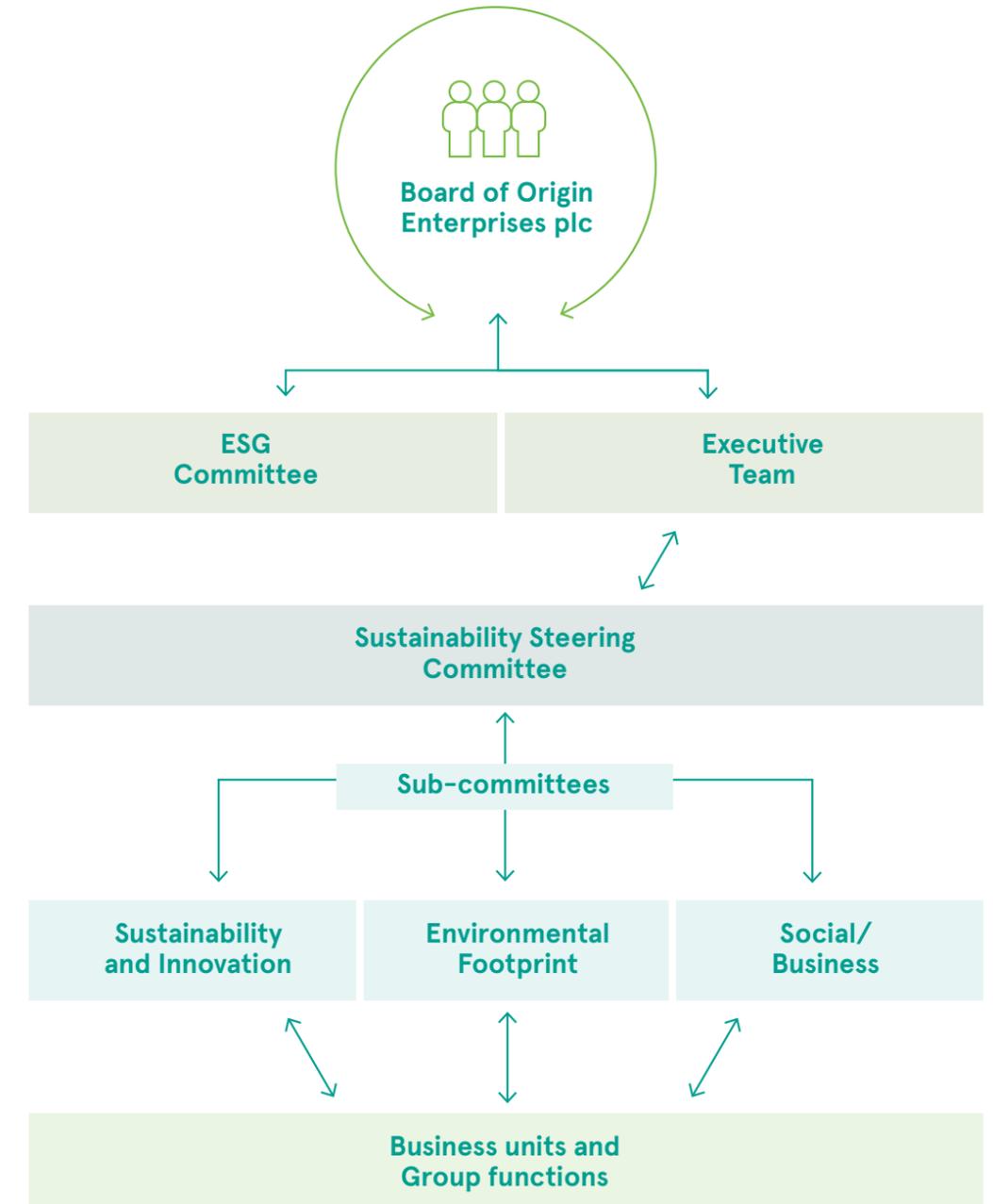
The executive team drives the pace of initiatives, helps shape the areas of focus and ensures an enterprise-wide alignment on ESG priorities and strategic direction.

Sustainability Steering Committee

The Group's development and implementation of policies, codes of practice, targets and external reporting on ESG matters is led by a cross-functional Sustainability Steering Committee comprising senior management across various departments and business units, with Finance, Human Resources, Audit & Risk, Legal, Health & Safety, Commercial, IT, Operations and R&D all represented, along with some Board members. This Committee meets monthly and is accountable to the executive team.

The Sustainability Steering Committee is supported by three sub-committees focused on implementing Origin's Nurturing Growth Framework:

Our Sustainability Approach



01 Our Sustainability Approach

- > Board Leadership
- Stakeholder engagement
- Materiality
- UN SDGs

02 Our Strategy - Nurturing Growth

03 How We Organise For Impact

Sustainability & Innovation Group (SIG)

Created in FY2022, the SIG consists of multidisciplinary teams across all business units. Its remit is to identify innovations which will accelerate the wide adoption of sustainable agronomy practices, built on an integrated solutions-based model.

Environmental Footprint Group

This Group leads the assessment of our resource efficiency performance, including the implementation of an Environmental Management System to an ISO 14001 standard and the development of Origin’s plan for reducing GHG emissions, aligned with science-based targets.

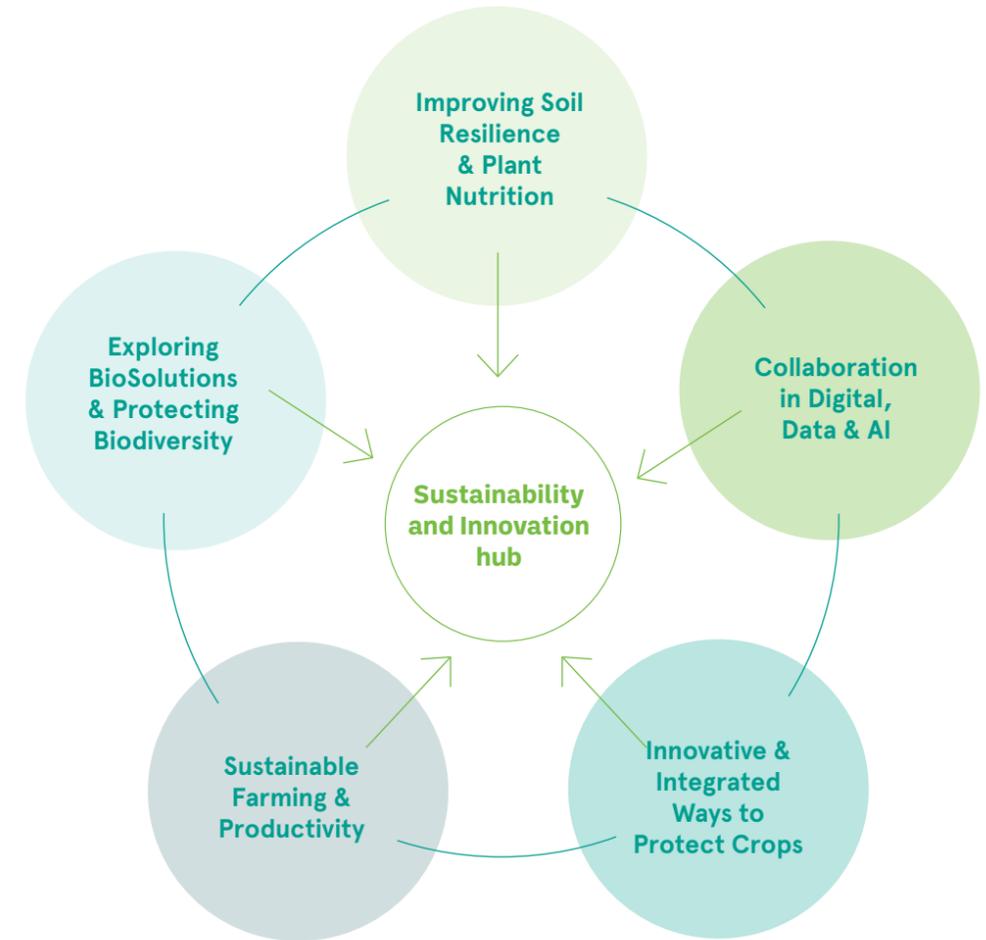
Social / Business Group

This Group is tasked with embedding the ten principles of the UN Global compact, supporting Group wide objectives related to the physical, mental and social health of employees and the adoption and implementation of best practice governance and reporting requirements into Group strategy/risk/opportunity analysis.



The central Sustainability and Innovation hub is accountable and responsible for the delivery of measurable KPIs, around five sustainable land use themes, with a team dedicated to each.

Sustainability and Innovation hub



Stakeholder Engagement

Continuous engagement and building long-term relationships is central to our vision to be the trusted partner of choice across our value chain.

Strengthening relationships, through partnerships and ongoing engagement, helps identify and evaluate the future risks and opportunities critical to the success of our business.

This is part of our responsibility to build a more sustainable future and create value for all our stakeholders, from employees, customers, suppliers, farmers, researchers, policy makers and NGOs, to our consumers and shareholders.

Strengthening our relationships with all these groups and individuals, through partnerships and ongoing engagement, is part of our responsibility to build a more sustainable future and create value for all our stakeholders.

We work with growers and professionals in agriculture, amenity, landscaping and ecology markets to integrate criteria into their purchase, sale and production procedures, that address social, ethical and environmental concerns.

Governance

The Board is responsible for ensuring effective engagement with stakeholders on economic, environmental, and social issues. Lesley Williams, Non-Executive Director, is Chair of the ESG Committee, which oversees the Group's sustainability and stakeholder engagement programme –including how this engagement informs our actions and how we incorporate feedback from this process into strategic business priorities.

How Origin engages stakeholders

Our stakeholder relationships are founded upon continuous dialogue, timely corporate disclosures, direct communication with key stakeholder groups, and collected feedback incorporated into strategic business priorities.



To meet our purpose of optimising the sustainable use of land, Origin is committed to an open and inclusive approach to its stakeholders.

01 Our Sustainability Approach

- Board Leadership
- > Stakeholder engagement
- Materiality
- UN SDGs

02 Our Strategy - Nurturing Growth

03 How We Organise For Impact

2022 stakeholder engagement



Employees **Customers** **Consumers** **Policy Makers / Regulators** **Civil Society** **Academia** **Investors** **Industry partners** **Suppliers**

Our Stakeholders

<p>We believe in empowering our 2,643 employees and strive to create a culture which cultivates an open, collaborative, diverse, and inclusive workplace.</p>	<p>We have developed long-term partnerships as trusted advisors and input providers, to our 48,000 customers in six countries. This includes farmers, agri-businesses, growers, landscapers, and amenity professionals.</p>	<p>In addition to the farming and amenity horticultural sectors, we are conscious of the wide-ranging number of end consumers for our products and services.</p>	<p>Origin liaises with relevant policy makers and regulators; as well as Government agencies and ratings agencies on all matters relating to our ESG agenda.</p>	<p>We respect the views of all stakeholders in the private realm with whom we interact – community groups, non-governmental organisations [NGOs], labour unions, charitable and professional associations.</p>	<p>Research plays a central role in 'Nurturing Growth'. We partner with leading academics and research institutes as we seek to identify new solutions, new crop varieties and new techniques to help growers optimise their crop production in a sustainable manner.</p>	<p>We are committed to sustainable shared value creation for our investors and providers of capital.</p>	<p>Origin is conscious of the growing demand for new models of multi-stakeholder collaboration to achieve food security, sustainable development and other global goals outlined in the UN SDGs.</p> <p>We are committed to working collaboratively with other industry partners.</p>	<p>We recognise that our suppliers also have a major role to play in delivering our 'Nurturing Growth' strategy.</p>
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Our Approach

<p>We continued to invest in our people and in fostering a 'Nurturing Growth' culture.</p> <p>Our employee engagement strategy 'Let's Talk' continued with Town Hall meetings, etc.</p> <p>We also included a sample number of employees from different geographies in the 2022 Materiality Pulse Check.</p>	<p>Through our agronomists we listen to our customers and ensure regular engagement. We included a small sample of farmer customers in the 2022 Materiality Pulse Check.</p> <p>We have digitally enabled over 1.8 million hectares via integrated personalised portals.</p> <p>We also expanded virtual iFarm events and trial tours and created a crowd sourcing programme for innovation sharing with customers.</p>	<p>We monitor and respond to the fast-changing expectations of consumers worldwide, by delivering sustainable agronomy and amenity products and services. We adhere to responsible communication in our marketing and brand programmes.</p>	<p>During 2022, Origin submitted responses to CDP, MSCI, and Sustainalytics.</p> <p>We have begun the process of adopting the recommendations of the Task Force on Climate related Financial Disclosures (TCFD).</p>	<p>We continued to engage with development partners and farmers' groups, in raising awareness of resource smart techniques. Our Business Units continued to support local and community projects through local volunteering and financial contributions.</p>	<p>Origin participated in industry research as a partner in innovation projects, including Yen Zero.</p>	<p>In 2022, Origin met with over 170 institutional investors and also held a Capital Markets Day in London.</p>	<p>Through industry forums, such as the Agricultural Industries Confederation (AIC), Origin is contributing to the development of circular, local and carbon-neutral methods of agriculture.</p>	<p>We foster a partnership approach with our suppliers and, through our Code of Conduct, we clearly communicate how our suppliers should operate as partners.</p>
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Materiality

01 Our Sustainability Approach

Board Leadership
Stakeholder engagement
> **Materiality**
UN SDGs

02 Our Strategy - 'Nurturing Growth'

03 How We Organise For Impact

We use stakeholder feedback to identify our most material economic, environmental and societal matters, so that we can manage our impacts on them. This underpins our approach to sustainability and the 'Nurturing Growth' strategy.

We are committed to undertaking Materiality Assessments every four years. The first was undertaken in 2019, and our next will be in 2023.

Baseline Materiality Matrix

The assessment identified twenty two material factors of which seven topics were deemed the most important to Origin and our stakeholders in 2019.

Prioritisation

In early 2021, we identified three emerging themes (Automation, Circular economy and Pandemic risk) and elevated Climate Change and Carbon Emissions as individual topics of particular importance to our business.

Defining the sustainability factors

Desk-based research and a benchmarking exercise produced a list of distinct sustainability factors that we considered relevant to our organisation.

Engaging with stakeholders

Stakeholder groups were engaged through interviews with customers, suppliers, regulators, industry associations, academics, research professionals, shareholders and lenders.

Prioritising results

Ratings of high, medium or low were assigned against each sustainability factor, based on the results from the internal and external stakeholder engagement. A sustainability factor register was developed.

Validating the results

We consolidated and analysed findings from the surveys and interviews to produce a preliminary matrix. Results were validated by our Sustainability Steering Committee.

2019 Materiality Matrix



01 Our Sustainability Approach

Board Leadership
Stakeholder engagement
> **Materiality**
UN SDGs

02 Our Strategy - 'Nurturing Growth'

03 How We Organise For Impact

Interim reviews and changes to material topics since 2019

We have adjusted to the rapid pace at which environmental and social themes are evolving within the agriculture and amenity sectors, though internal review and by undertaking an independent materiality 'Pulse Check', in July 2022.

An important finding in the 2019 Materiality Assessment was that Origin employees and agronomists were considered crucial in securing the future success of the business as a source of innovation and in building lasting relationships with customers.

Our Materiality Pulse Check was based on a combination of one-to-one interviews and questionnaire responses to provide, primarily qualitative, feedback from employees, Board members, and farmers (UK and Poland).

The Pulse Check also sought to include the independent sustainability / NGO perspective.

Our internal review early in 2022 led us to update the list of material themes of most relevance to Origin to include Biodiversity and we added the theme, Pandemic Risk, to Business Resilience and Risk Management.

The 'Pulse Check' reinforced our current selection of material themes and identified an additional theme of "People Enablement and Community", which has been adopted.

The recommendation, going forward, is to include NGOs and a wider customer base in the 2023 Assessment.



The 2022 'Pulse Check' enabled us to deepen our internal consultation to include customer facing employees, as well as the Board, and a customer sample across key geographies.



Themes emerging in 2022 from our 'Pulse Check' and other stakeholder engagement

Employees	Customers	Consumers	Policy Makers / Regulators	Civil Society	Academia	Investors	Industry partners	Suppliers
<ul style="list-style-type: none"> > People enablement > Community engagement 	<ul style="list-style-type: none"> > Soil and crop health > Product research and innovation 	<ul style="list-style-type: none"> > Promoting sustainable food production systems > Biodiversity > Water stewardship > Circular economy 	<ul style="list-style-type: none"> > Task Force on Climate-Related Financial Disclosures 	<ul style="list-style-type: none"> > Climate change > Promoting sustainable food production systems > Biodiversity 	<ul style="list-style-type: none"> > Climate change > Promoting sustainable food production systems 	<ul style="list-style-type: none"> > Business resilience and risk management > Emerging nature economy > Biodiversity 	<ul style="list-style-type: none"> > Climate change > Promoting sustainable food production systems 	<ul style="list-style-type: none"> > Relationships > Supply chain > Shortages and disruption to supply > Climate change mitigation

Origin 2022 Materiality Themes

1. Business integrity

'Integrity' is one of our values and is consistent with ethical standards being at the heart of the Group. It represents our commitment to our values, to doing the right thing, personally and professionally.

2. Business resilience and risk management

Business Continuity and Resilience is a central enabler of the Origin business. Origin had sustainability and business continuity strategies integrated prior to the 2020/2021 pandemic and to the 2022 disruptions to energy and food security. These strategies have allowed us to adapt, and have made us more resilient in the face of change and unexpected events.

3. Health safety and wellbeing

Origin is committed to keeping all our employees, contractors, customers, suppliers, and communities safe and minimally exposed to risks generated by our processes.

4. Promoting sustainable food

Through the adoption of innovative technologies, data collection and knowledge transfer, we promote shared responsibility for the sustainable production, supply and consumption of safe and nutritious food within a viable industry.

5. Long lasting relationships and quality of service

We are committed to nurturing long-term relationships with all stakeholders and working collaboratively to improve environmental, social and economic outcomes.

6. Food security

Food security means that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life. For Origin this means supporting sustainable food production and optimising yields through sustainable agronomy in our core geographies, to deliver sufficient nutritious food at affordable prices.

7. Circular economy

Through our innovation, products and tailored soil nutrition and advisory services, we are supporting a move towards a Circular Economy – using materials more efficiently and improving waste management by:

- > Improving carbon capture/sequestration opportunities on farm
- > Using clean and renewable materials in the agricultural supply chain
- > Life Cycle Assessments (LCA).

8. Climate change

We will address climate change by helping to transform the food system through our innovation, products and services

a. Reducing Carbon Emissions

Origin is committed to reducing our direct and indirect greenhouse gas emissions. We are setting SBTi approved carbon emissions targets for Scope 1, 2 and 3, to 2030

b. Increasing Carbon Sequestration across the food chain

We are committed to increasing farm carbon sequestration across our client base.

Our actions in relation to soil and crop health, water stewardship and biodiversity also support Climate Change.

9. Soil and crop health

Through our environmental products and tailored soil nutrition services, Origin is committed to sustainable agriculture and amenity land use in urban and rural areas. Our products and services are designed to nurture crop and soil health and to optimise biodiversity and other ecosystem services provided by healthy soil (such as water regulation and nutrient cycling carbon sequestration and storage).

10. Water stewardship

Origin is committed to maintaining or improving water quality, and to reducing water usage and water stress within our business and throughout our value chain. Our innovative products support drought tolerance and improve soil structure and percolation.

11. Product research and innovation

Our product research and innovation focus is about delivering integrated management programmes to support growers through the adoption of best practice and product innovation, and more recently, by applying digital solutions, including nutrient management.

12. Biodiversity

Through our environmental and ecological products and services, Origin is committed to conserving biodiversity and supporting ecosystems as part of natural capital. Our soil nutrient management encourages soil biodiversity while optimising crop productivity. Managing soil nutrients also reduces water nutrification, so protecting biodiversity associated with water courses. Origin's amenity turf development promotes biodiverse urban and rural amenity greening.

13. Enabling people and communities

Origin is committed to developing and empowering its people and to supporting the communities where we operate, especially farming communities and the areas where our employees and customer are based.

This focus on materiality informs our business strategy and the themes identified align with the UN SDGs adopted by Origin.

01 Our Sustainability Approach

Board Leadership
Stakeholder engagement
> **Materiality**
UN SDGs

02 Our Strategy - 'Nurturing Growth'

03 How We Organise For Impact

UN Sustainable Development Goals

The UN's 17 Sustainable Development Goals (SDGs) provide a globally accepted roadmap for addressing many of the most urgent global, economic, environmental and social challenges. The achievement of these goals by 2030 requires broad participation, with a central role for businesses.

Together with our business units, we prioritised the SDGs that are most relevant to Origin and on which we can deliver the greatest impact. Delivering against these goals will require working with multiple partners, private and public and sharing our knowledge, skills and expertise to make lasting change.

We investigated the detailed sub-goals behind each SDG and how they align with our business strategy and sustainability approach. We see the greatest opportunity for impact with SDGs 2, 5, 8, 12, 13 and 15.



01 Our Sustainability Approach

- Board leadership
- Stakeholder engagement
- Materiality
- > UN SDGs

02 Our Strategy - Nurturing Growth

03 How We Organise For Impact

2. Zero Hunger

Until such time as eating habits shift or food waste is eliminated, Sustainable Intensification will remain the predominant food production model. We recognise the necessity to adopt new technologies and innovative tools and practices, in order to meet the growing global demand for food in the coming decades. Our approach focuses on closing yield gaps and creating efficiencies within agricultural production systems that support the goal to eradicate hunger and food insecurity.

Macro-growth driver: Global food supply responsiveness

12. Responsible consumption and Production

Land degradation, declining soil fertility and unsustainable water use, are all lessening the ability of the natural resource base to supply food.

Through the adoption of innovative technologies, data collection and knowledge transfer, we are working to reduce pre-harvest and nutrient losses, while optimising input efficiency.

Macro-growth driver: Sustainable agronomy

5. Gender equality

Gender-specific obstacles—such as lack of access to land, financing, education, and equal treatment—put females working in agriculture at a significant disadvantage. This experience translates into the broader agricultural supply chain, which is traditionally a male dominated field, with just 14% of management positions in the agricultural sector held by women. Diversity, inclusion and equality (including gender) is championed at the highest level in Origin by our Chief Executive and the Board.

13. Climate Action

It is still possible, using a wide array of technological measures and changes in behaviour, to limit the increase in global mean temperature to two degrees Celsius above pre-industrial levels.

We are looking to play our role in limiting global warming to 1.5°C, by focusing on reducing green house gas emissions from our operations, working with our supply chain and supporting our customers to provide solutions to deliver the collective goal.

Macro-growth driver - sustainable agronomy.

8. Decent work and economic growth

Our top priority is the health, safety and wellbeing of our employees. We are an organisation where diverse talents come together and work hard to ensure all our colleagues feel valued, included and have a sense of belonging. We are committed to paying employees fairly for the work they perform, regardless of personal beliefs or any individual characteristics.

We equally strive to be the trusted partner of choice across our value chain, believing that relationships built on trust, integrity and shared values will be sustainable and beneficial for all.

15. Life on Land

Micro-organisms and invertebrates are key to ecosystem services, we understand their important contributions and are actively working to encourage habitat creation on lands not used for food production..

Operating across multiple land-use platforms, we are adopting an approach to promoting sustainable land management, that aims to leave the natural environment in a measurably better state than it was beforehand.

Macro-growth driver: Emerging nature economy

Key Performance Indicators

For each of our selected SDGs we have set KPIs and aligned them with our most material themes.

	Origin KPI target	Material theme	Sustainable Development Goal
<p>01 Our Sustainability Approach</p> <p>Board leadership Stakeholder engagement Materiality > UN SDGs</p> <p>02 Our Strategy - Nurturing Growth</p> <p>03 How We Organise For Impact</p>	<ul style="list-style-type: none"> > Optimise productivity - Increase Nitrogen Use Efficiency of crops by 20% by 2030 > Enhance Soil health - use indices to support growers' decisions > Fast-track the development of BioSolutions > Utilise digital tools to optimise production operations > Reduce water usage and protect water quality > Zero waste to landfill in the UK and Ireland by 2025 	<ul style="list-style-type: none"> > Food Security > Soil and crop Health > Product research and innovation > Promoting sustainable food production systems > Water Stewardship > Circular economy 	<p>2 ZERO HUNGER</p> <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> <p>13 CLIMATE ACTION</p> 
	<ul style="list-style-type: none"> > Achieve 30% female representation in leadership and management positions 2030 > Achieve a minimum of 33% female representation on the Board 	<ul style="list-style-type: none"> > Enabling people and communities 	<p>5 GENDER EQUALITY</p> 
	<ul style="list-style-type: none"> > Target a Reportable Incident Rate <6 > ROIC 12% - 15% 	<ul style="list-style-type: none"> > Health safety and well being > Long lasting relationships and quality of service > Business resilience and risk management 	<p>8 DECENT WORK AND ECONOMIC GROWTH</p> 
	<ul style="list-style-type: none"> > Achieve Net zero emission by 2050 > Establish a Group wide EMS by 2023 > Commitment to Science Based Targets - Verify Scope 1 - 3 GHG emissions targets by 2023 	<ul style="list-style-type: none"> > Climate Change > Business resilience and risk management > Promoting sustainable food production systems > Long lasting relationships and quality of service 	<p>13 CLIMATE ACTION</p> 
	<ul style="list-style-type: none"> > Establish 1,000 miles of 'Wildlife corridors' by 2030 by 	<ul style="list-style-type: none"> > Biodiversity > Promoting sustainable food production systems > Product research and innovation 	<p>15 LIFE ON LAND</p> 

02 OUR STRATEGY NURTURING GROWTH



NURTURING OUR ENVIRONMENT

SUPPORTING SUSTAINABLE LAND USE



We are committed to reducing the environmental impacts of our operations on air, land and water, and in pursuit of our purpose to optimise the sustainable use of land, we are developing innovative solutions and services that help growers tackle the environmental challenges facing our supply chain.

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Overview

We seek to Nurture our Environment through both the Business We Do and How We Do It (Our Operations).

We value our long established, trusted position as a collaborative partner and are working closely with our growers, manufacturers and other professionals in agriculture, amenity, landscaping and ecology markets to promote integrated crop management, evaluate and explore regenerative farming techniques, promote sustainable amenity turf practices and biodiversity-positive outdoor spaces. Origin play a key role in helping to address climate change, pollution and biodiversity loss and to promote societal well-being.

Our strategy for sustainable agronomy is about creating systems to meet economic and food production needs, whilst conserving resources and protecting the environment.

We are establishing ways of measuring and monitoring our wider impacts and, more importantly, we are using innovation in our product development, digital support and advisory service to drive change towards more sustainable agronomy.

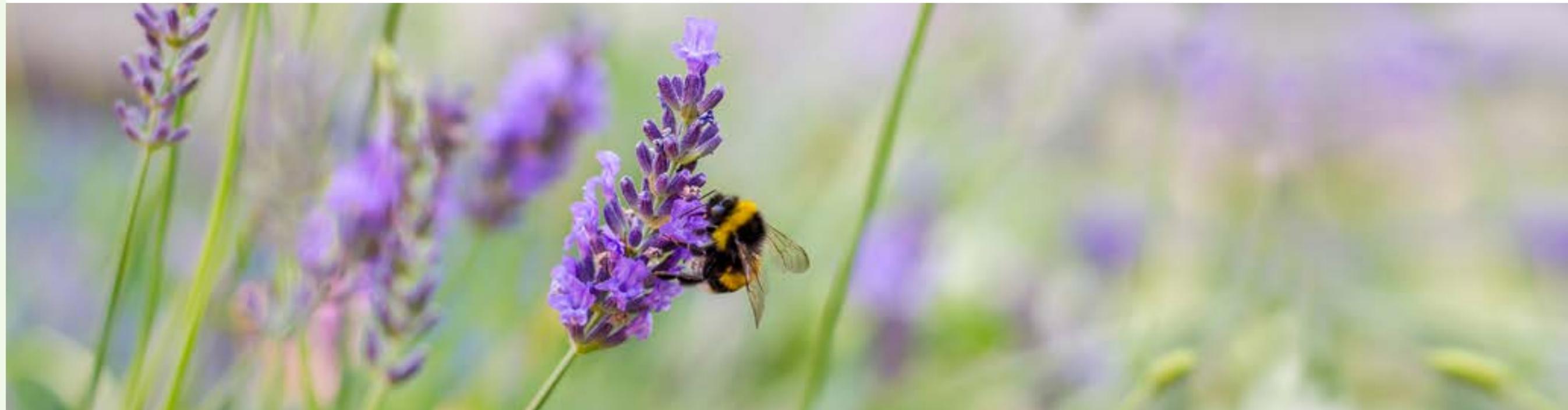
Internally, Origin initiated standardised Group reporting to track and report our key environmental metrics, across our three operating geographies in 2017. The ISO 14000 series, as developed by the International Organisation of Standardisation, guides our approach to environmental management and, during 2022, we commenced the development of an Environmental Management System to an ISO 14001 standard in our UK and Ireland operations.

We follow the guidance provided by the Science-Based Targets Initiative (SBTi) to develop robust and credible goals through a phased approach. In addition, we aim to reduce waste and water usage, improve soil health and resilience and promote biodiversity.

To fully integrate and embed sustainability across the Group we have developed Key Performance Indicators (KPIs) and measures and identified how they relate to our selected UN SDGs and most material themes. [See page 19.](#)



Origin is committed to setting long-term science-based targets to reach net-zero GHG emissions throughout our value chain, by no later than 2050.



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

> Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

The Business We Do - Sustainable Food Production

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

> The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Our role

We play a crucial role in helping our customers balance the sometimes conflicting aims of food production and environmental imperatives. For decades, Origin and its companies have helped plug the knowledge gap between science and practical farming, by investing in research to find solutions to pertinent agronomic challenges and then to apply them into customers' production systems.

With circa 23% of global greenhouse gas emissions attributed to agriculture, forestry and other land uses, limiting the impact of climate change to 1.5°C requires major changes for agriculture, particularly when it comes to reducing emissions per hectare of production.

Soil Land Use Strategy

Fertile healthy soils are part of our Natural Capital, providing food, biodiversity, drought resilience, flood protection and other services. Sustainable land use starts with soils, a finite and fragile resource which requires careful management to protect it from the degradation pressures of:

- > Increasing food demand from a growing population
- > Increasing desertification and flooding, caused by climate change
- > Increasing global urbanisation
- > Potential pollution from waste materials.

Globally, it is estimated that 26% of the carbon stored in the top one metre of soil has been lost since pre-historic times (FAO 2015).

Soils are at risk of further compaction and erosion, which will reduce fertility and increase the risk of flooding. Conversely, soils also face the challenge of more drought episodes.

It is therefore vital that we protect this fundamental resource to maintain food production and protect the environment.

To play our part, we created a strategy to help implement more sustainable agronomic practices with our customers, by focusing our efforts on:

- > Soil Resilience and Plant Nutrition
- > Balancing Sustainability and Outputs to optimise productivity
- > Digital Innovation to promote adoption of sustainable practices
- > Innovative and Integrated Plant Protection
- > Enhancing Biodiversity & Protecting Natural Capital.

This strategy will help our customers grow into a more productive, sustainable future and help maintain our position as a key member of their decision-making teams.

OUR AGRONOMISTS

Our agronomists continue to be foremost in delivering our strategy, forming long-term relationships with farmers. They provide customers with a complete understanding of their soils and how they can promote change for a healthier, thriving soil.

STORIES OF IMPACT



Coming from a traditional farming family in Lincolnshire, it was engraved on me how farming is a fine balance between producing high quality food sustainably and being profitable at the same time. 'Farming Smart' is about achieving yield while maximising environmental attributes and profitability. Each situation you're faced with on-farm is different to the next one and may require a different approach to achieve the same end goal. We provide our customers with the most cutting-edge technology, information and services to be as sustainable as possible. We take our customers' needs and requirements seriously and provide a whole integrated approach to support their change towards a more sustainable way of farming.

Fred Fowler, Agrii Agronomist, North Lincolnshire

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT
Overview

> **The Business We Do** – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Our Soil Resilience Strategy

Our Soil Resilience Strategy (SRS) focuses on improving soil health and providing practical advice on how soils can be managed and enhanced. It uses physical, chemical and biological soil assessments, with scientific interpretation to develop strategies that help farmers and growers achieve their overall objectives and become more sustainable.

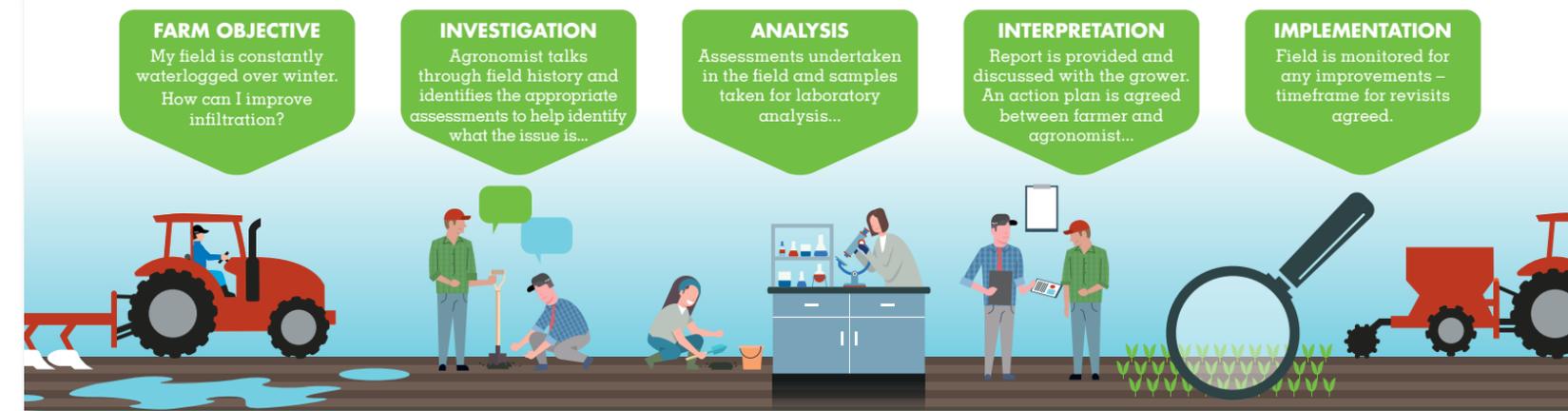
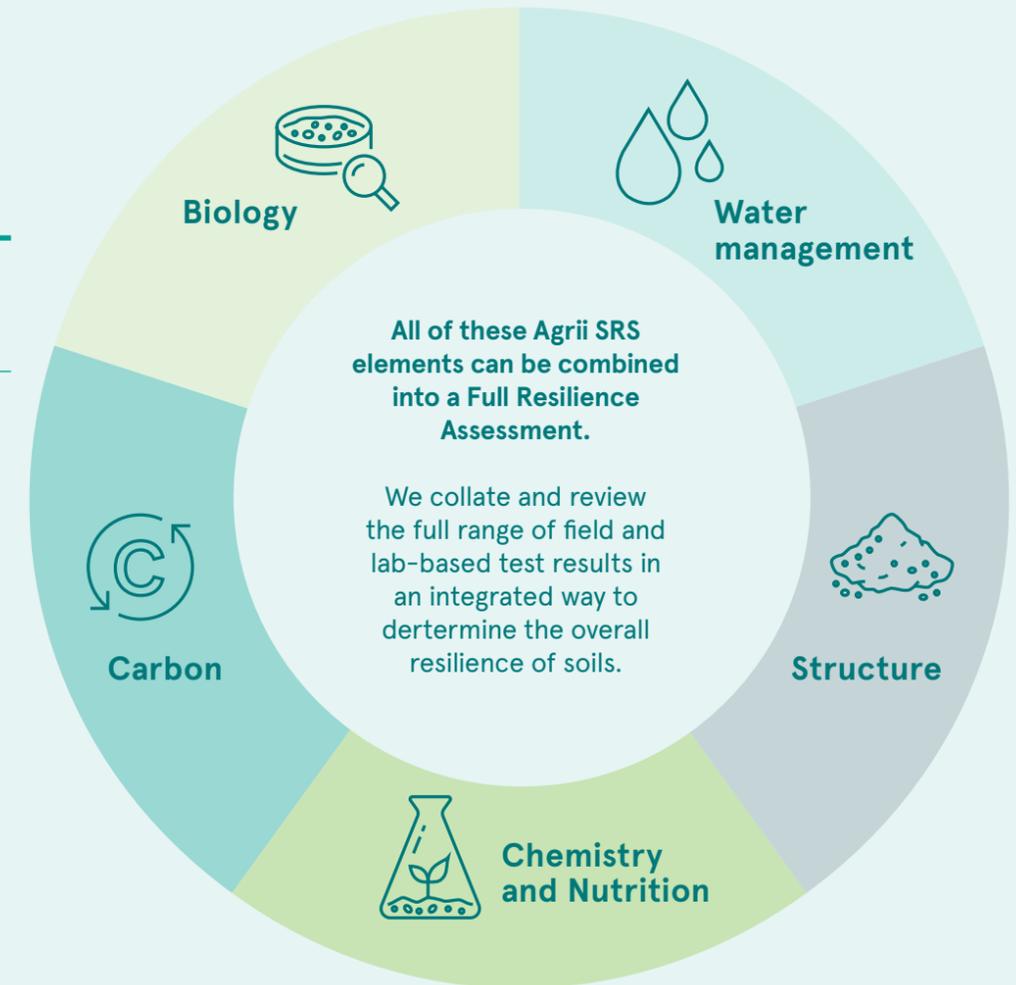
The SRS draws on quantitative measures, such as laboratory analysis and in-field assessments, in addition to qualitative measures, such as a detailed questionnaire to understand the opportunities and limitations in farming systems.

This approach allows us to offer services based on soil science and to incorporate practical advice on soil management. The user can select from a combination of options, depending on their needs and business objectives. This will foster the growing interest in soil health and generate reliable evidence for soil management planning.

Technical developments have been underway to make soil analysis more engaging and interactive, enabling farmers to get the best use out of their data.



Healthy, fertile soils are key to sustainable farming.



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

- > The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Soil Resilience & Plant Nutrition



Target:

2022 - 2025: Benchmark all soil analysis, using health indices, through our Soil Resilience Strategy pilot in the UK

This initiative will position Origin as a global leader in ensuring soil health as a foundation for commercial, sustainable farming operations.

KPI	Supporting Initiative	2022	2025	2030
Enhance soil health	> From our 2021 baseline, increase the numbers of farm customers benchmarked using Soil Health Indices	> Work commenced to benchmark customers in the UK	> Soil health indices benchmark set across the Group	> Linear increase to 2030
Improve soil resilience and plant nutrition		> A baseline was established and a farm specific action plan to 2030 was developed	> Improved accuracy	

The Soil Health Index

The purpose of the Soil Health Index is to help increase our growers' awareness of the health of their soils and to support decisions on optimal nutrition, cultivations and cropping. We display the indices using a traffic light system, to help highlight soils with the potential for improvement (figure 1).

In conjunction with the UK Centre for Ecology & Hydrology, we are currently looking at "active carbon" as offering the greatest promise to measure short term / incremental changes in soil health.

Desired outcome

By 2030, our aim is to have all soil analysis benchmarked using health indices, throughout the geographic regions in which we operate.

The aim of the indices is to help increase our growers' awareness of the health of their soils and to support decisions on optimal nutrition, cultivation and cropping (therefore helping with delivery of additional target to improve Nitrogen Use Efficiency by 20%). This will help increase on farm-efficiency by targeting inputs and management practices appropriate to the soil type in each field.

Overall our approach will support growers in working towards net zero emissions, reducing environmental losses, maximising productivity and ultimately increasing soil resilience.

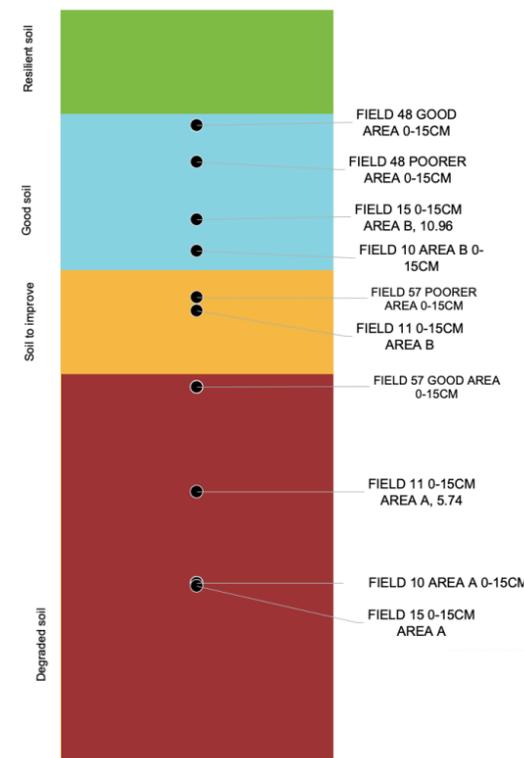


Figure 1. An example of a Soil Health Index from our Revesby iFarm, where red demonstrates a degraded soil, vulnerable to climatic and system changes, and green a highly resilient soil with minimal environmental risks and optimum efficiency. Any Fields classified as red can then be prioritised over blue/green for improvement, to help maximise crop efficiency and reduce environmental impact.



01 Our Sustainability Approach

02 Our Strategy – Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

- > **The Business We Do – sustainable food production**
- The Business We Do – supporting outdoor space regeneration
- Enhancing biodiversity and protecting natural capital
- How We Do Business – our operations
- Climate Change
- Reducing water usage and water stress
- Waste reduction
- Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact



Optimising Productivity – Nitrogen Use Efficiency



Target:

Increase Nitrogen Use Efficiency (NUE) of crops by 20% by 2030, using improved crop nutrition products and precision agriculture tools.

NUE is the proportion of total available nitrogen that is used by the crop

Origin’s focus on Digital Agronomy enables enhanced resource use efficiency, through for example, using known field criteria for geospatial variation in Variable Rate Nitrogen (VRN) application.

KPI	Supporting Initiative	2022	Interim target	2030
Optimise productivity	> Increase NUE of crops by 20% by 2030 using improved enhanced efficiency fertiliser ‘EEF’ products and Variable Rate Nitrogen tool	> Working with the Agricultural Industries Confederation (AIC), the National Farmers Union (NFU) and the Country, Land and Business Association (CLA) in liaison with the UK Department for Environment, Food and Rural Affairs (DEFRA) to agree an industry wide definition of NUE	> Develop digital NUE tool to aid measurement by 2024. > Benchmark to provide accurate baseline data > Increase adoption of Precision Agriculture planning (Seed and Nutrition) by 50% by 2023, including VRN to drive improvements in NUE	> Increase NUE by 20%

Farming and the environment are inseparable and improving NUE is becoming well recognised as a solution that works for both.

Fertilisers have the greatest impact on GHG emissions from arable cropping. Improving the efficacy of the nitrogen applied to crops, is one of the simplest ways of reducing a farm’s impact on climate change. Over the past 60 years, NUE has been gradually increasing, from a baseline of 40% in the 1960s to its current position where 60% of the nitrogen applied is being utilised by the crop in the UK. But there is room for further improvement.

Increasing NUE is about growers making small gains to improve the plant’s access to the fertiliser that is applied, potentially offering more flexibility on dose rate. There are no downsides to improving

NUE – the farmer gets more crop per kilograms of nitrogen and the environment benefits from less available nitrogen potentially lost as nitrogen related GHG emissions and pollutants.

Our intention is to measure improvement in NUE across our growers to achieve a 20% improvement by 2030. However, the process of achieving our target is a long-term and iterative one.

We started by getting an industry consensus on the definition of NUE. This was achieved early in 2022 between the Agricultural Industries Confederation (AIC), the National Farmers Union (NFU) and the Country, Land and Business Association (CLA) in liaison with the UK Department for Environment, Food and Rural Affairs (DEFRA). Origin / Agrii staff contributed to this process through our seats within the AIC Agriculture and Environment Committee.



Increasing NUE will reduce GHG emissions from arable cropping.

As part of the wider programme, we will ensure that our agronomists receive relevant training on NUE. This will be achieved through regular training modules, independently examined by BASIS and accredited by Harper Adams University College.

In the UK, the industry (led by AIC) is now in discussions with DEFRA on how best to encourage farmers to measure NUE to start the benchmarking process. We will undertake NUE measurements with farmers during crop year 2023/24 to create benchmark data. We will also work with farmers on digital integrated nutrient management plans ‘iNMP’ with a focus on increasing NUE by 20% by 2030 from the 2023/24 benchmark.

Concurrently, from 2022/23, we will undertake NUE measurements with our sponsored farmers in the **YEN Zero project** to see if there is a correlation between high NUE and low GHG crop intensity.

STORIES OF IMPACT

IMPROVING NITROGEN USE EFFICIENCY

In 2021, we conducted trials at Lemmington Hill Head Farm in Alnwick Northumberland to demonstrate how NUE can be improved, with additional benefits for soil health, carbon footprint and the sustainability of the farming business.

In a split field lamb grazing trial half the field was applied with Ammonium Nitrate 'AN' 34.5% and the other half with an Origin NUTRI-MATCH prescription fertiliser containing 15% less nitrogen.

Results of the NUTRI-MATCH treatment:

- > Lambs benefited from 20.7% higher growth rates, and the forage contained more than 33% more nitrogen on average, despite 15% less nitrogen being applied
- > The forage was more nutritious, with a wider range of nutrients
- > The return on investment was high
- > Grass cover was consistently higher
- > The soil status of all the nutrients was higher at the end of the trial
- > The NUTRI-CO₂OL carbon footprint was over 21% lower per hectare.



I've always wanted to be as productive as I can from a forage-based system and produce forage in an environmentally sensitive way.

We were clear in our aims with the trial, and knew we wanted to achieve higher growth rates and improve forage quality through a targeted soil nutrition application. We wanted to see if this was possible by reducing nitrogen use as well. It is something I will be looking to do in the future and farmers using a lot of nitrogen could benefit hugely from NUTRI-MATCH.

James Drummond, Farmer, Lemmington Hill Head



NUE-TRITION
nitrogen use efficiency

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

> The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Digital Innovation

Digital agriculture has the potential to deliver a step change in efficiency, productivity and sustainability, at the farm level and across the value chain. Input optimisation, environmental audit, and land use decision making are all areas where our digital tools, R&D and data analytics can make a big impact.

We are focused on informing crop nutrition, soil health and resilience, and farm productivity decisions and insights. This is being achieved by combining trusted ground truth data and remote sensing technologies into scalable, predictive analytics that support on farm decision-making.

For NUE, we are collaborating with business stakeholders, across the Origin Group and external partners, to research the optimisation of nitrogen applications to maintain yield while reducing wastage, run-off and emissions. This collaboration spans initiatives from the integration of multiple data sources to machine learning modelling techniques, in-field nitrogen measurement and farmer agronomist engagement. The outcome is more efficient variable rate algorithms and improved nitrogen efficiency.

By aligning priorities across Origin, our go-to-market technology capabilities are centred on the support of decision-making around sustainable land use.

Focus areas include:

- > Improving soil health
- > Increasing on-farm productivity and viability
- > Protecting and enhancing biodiversity
- > Nutrition focused on sustainability and optimal growth
- > Enablement of a market-leading agronomist network
- > Predictive analytics, built on trusted data
- > Food production traceability and evidence
- > Integrated pest management
- > Environmental audits such as Sustainable Farm Scheme (SFI) support and carbon calculations.

We make use of data, from large scale geo-spatial information to detailed sub-field analysis, to provide our customers with solutions that are environmentally sustainable and economically viable.

Origin views industry and academic research partnerships as an opportunity to accelerate innovation and meet current and future land use needs.



By delivering an unparalleled level of insight, our digital solutions help to enhance yields, reduce risks, save time and optimise inputs.



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

- > The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

STORIES OF IMPACT

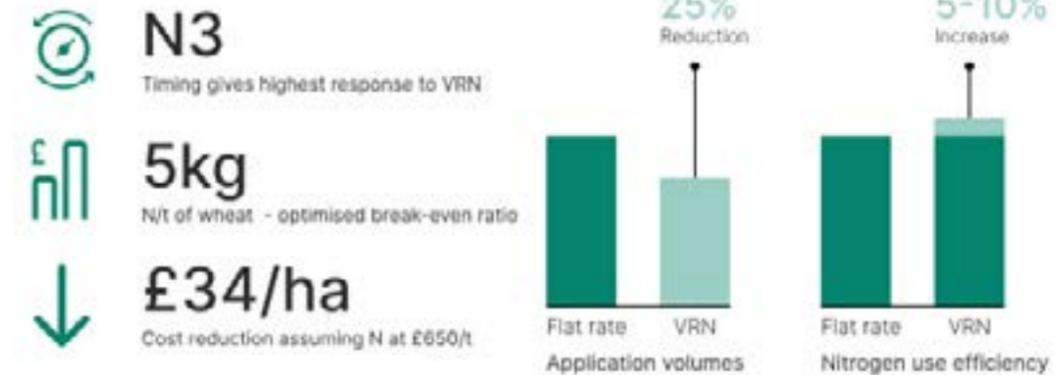
CLOUD-FREE IMAGERY - WHATEVER THE WEATHER

In March 2022, Origin partnered with Aspia Space, to launch a world-first, cloud-free imagery service guaranteeing UK farmers clear satellite images of their crop development every six days – whatever the weather.

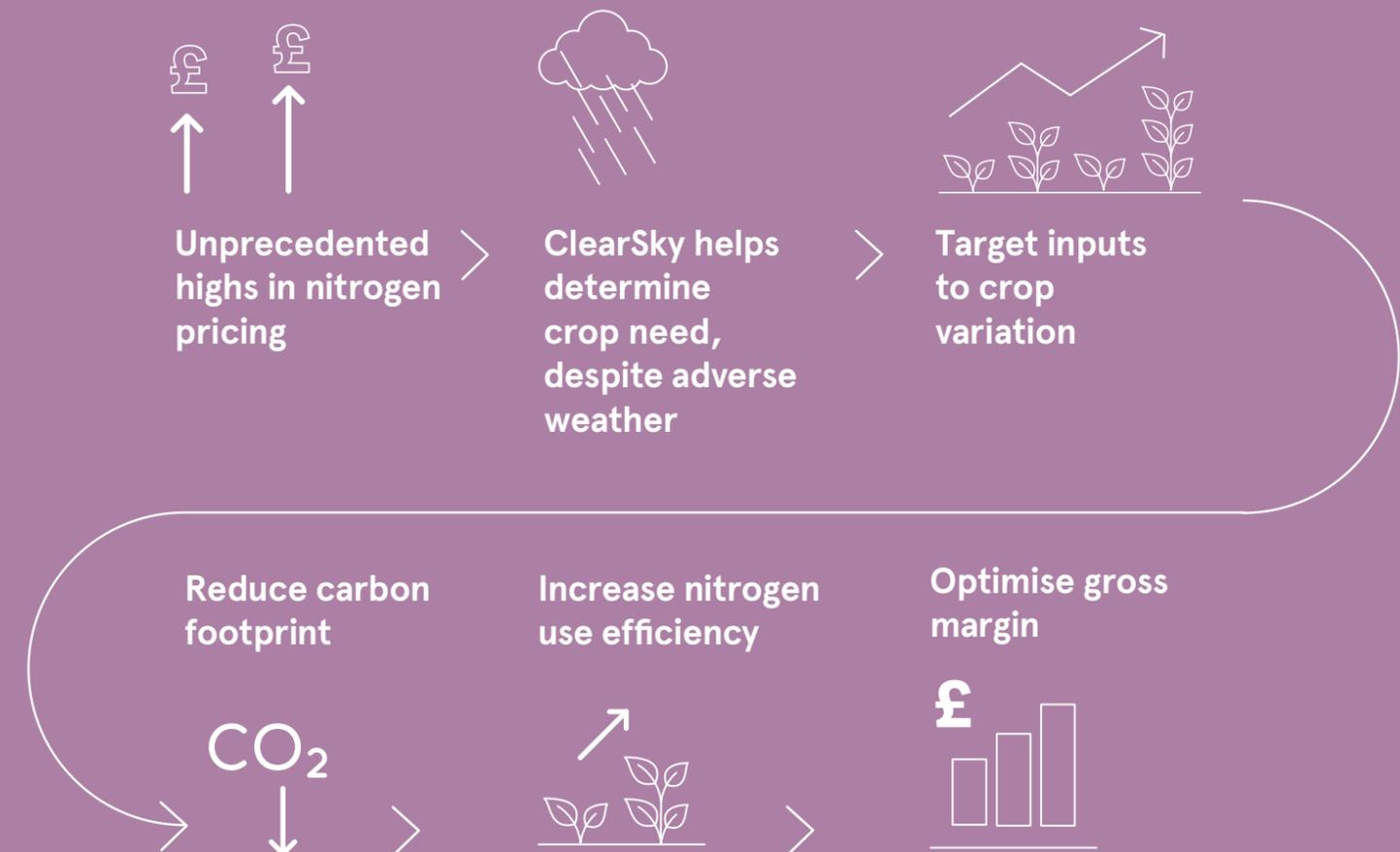
Since then, we have deployed the 'Clearsky' service on 800,000ha of farmland, delivering 220,000 images in just six months to help farmers sustainably optimise their inputs and yields.

ClearSky feeds radar data into a deep neural network, to derive the view of a field that a satellite would see if there were no clouds blocking its camera. This means that even in the presence of 100% cloud cover, we can offer the regular, reliable, consistent imagery our customers need to implement sustainable practices such as variable rate nitrogen planning that can increase input efficiency.

BENEFITS OF VARIABLE RATE NITROGEN (VRN): UK CASE STUDY



Cloud-free imagery used to address variable rate nitrogen



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

> The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

> **The Business We Do – sustainable food production**

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Innovative and Integrated Plant Protection



Target:

Support the development of high yielding crops.

For sustainable food production, we view optimising the yield on existing arable land, as a priority, leaving biodiverse areas untouched.

Conventional, modern Plant Protection Products (PPPs) remain key to yield and quality protection, globally protecting 20-40% of yield and reducing food wastage due to rots in store, whilst only making up 1% of the GHG emissions from agriculture. However, the availability and efficacy of PPP products is gradually declining, posing a threat to the future of food production.

We recognise that to maximise yields efficiently, the industry needs to reduce dependency on PPPs for controlling weeds, pests and diseases. A future with less reliance on these products is one with an increasing adoption of holistic farm solutions.

Origin has always supported Integrated Pest Management (IPM) principles through our Agrii and Amenity operations, where we advocate cultural control methods (such as the use of resistant plant varieties) as the first line of defence. This has helped to minimise the reliance on PPPs and reduced any unintended consequences for the environment or the operator.

Our approach is thoroughly researched and offered to agronomists and customers as the most sustainable approach and we are excited by emerging technologies and practices that we see under development. These have been assessed as having positive, negative or neutral effects on macro factors, such as biodiversity and climate change.



Many of the alternatives to conventional crop protection have significant downsides on the macro factors above. For example, mechanical practices such as electro-weeding may impact on non-target organisms, or require heavy batteries, causing soil compaction and high fuel consumption.

Plant breeding developments and precision agriculture deliver positive to strongly positive impacts across key areas of importance to growers. Techniques such as Gene-editing (as opposed to GMOs), have been recently approved in the UK for scientific development, and will cut breeding cycles for more resistant varieties in half to ~ six years, and allow specific healthy food traits to be introduced.



High yielding crops are linked to lower GHG emissions. Every tonne/hectare extra yield produced lowers CO₂e/tonne by 34kg.

source: ADAS YEN Zero

Impacts of Innovative Emerging Technologies and Practices

Effect on:	Mechanical practices	Plant Breeding	BioSolutions	Plant Diversity	Precision Agriculture
Crop yield	Positive	Strongly positive	Strongly positive	Positive	Strongly positive
Farmer income	Positive	Positive	Positive	Positive	Positive
Biodiversity	Negative	Positive	Positive	Positive	Positive
Climate change	Negative	Positive	Positive	Positive	Positive
Public health	Positive	Positive	Positive	Positive	Positive
Food safety	Positive	Positive	Positive	Positive	Positive
Food security	Positive	Positive	Positive	Positive	Positive

■ Negative
 ■ Neutral
 ■ Positive
 ■ Strongly positive

Source: Adapted from 'The Future of Crop Protection in Europe 2021', Scientific Foresight Unit

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

> **The Business We Do – sustainable food production**

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

BioSolutions and Beyond



Target:

Fast-track the development of BioSolutions



Controlling pests, weeds and diseases in crops and enhancing crop health can be approached in different ways. At Origin Enterprises, we believe the most sustainable approach is to develop cultural control methods alongside a blend of synthetic Plant Protection Products and naturally derived options, commonly known as 'BioSolutions'.

BioSolutions are products that might be used instead of, or alongside, conventional Plant Protection Products based on synthetic chemistry, to help protect crops and enhance growth in a number of different ways. For simplicity we divide them into two categories.

Biostimulants: these can be either microbial (for example, plant growth promoting bacteria or mycorrhizal fungi which form important associations in the soil), or non-microbial (seaweeds, humic acids, amino acids).

Biocontrols: these can include fully registered Biopesticides, based on living micro-organisms or natural products. If registered they have been shown to control pests or diseases either directly, or even indirectly – for example Elicitors, which help stimulate the crop's own defence mechanisms.

How important are they?

Our view is that BioSolutions will play an increasing role in global agriculture, horticulture and amenity solutions for a number of reasons:

- > Whilst we promote cultural controls whenever we can (for example variety choice, drill date and so on), **synthetic PPP are a critical part of our agronomy toolbox – and they are declining in number** due to discovery and registration difficulties, leaving a number of agronomy challenges with no viable solutions. BioSolutions can help plug that gap by using a different mode of action and reducing selection pressure for resistance.

- > **Public pressure and policies**, such as the EU Green Deal and its Farm2Fork strategy, which includes the reduction of synthetic PPP use by 50% by 2030, will encourage growers and agronomists to increasingly turn to BioSolutions, as many will be kinder to non-target organisms.
- > Supermarkets increasingly **demand zero residues** in certain foodstuffs, and BioSolutions used towards the end of the programme, just prior to harvest can help deliver on that aim.
- > With **climate change** becoming a reality for many of us, the benefits offered by some Biostimulants, such as stress relief, improved nutrient use efficiency and drought tolerance are timely and should be exploited. Essentially they help improve crop growth, by improving nutrient uptake, nutrient use efficiency, or tolerance to stress such as the very dry conditions we have experienced in recent springs and summers.

The development challenge

However, with the current focus on food security and availability, yield should not be compromised, and whilst BioSolutions offer much on paper, in practice they tend to be less reliable than synthetic PPPs. In addition, they are being introduced onto the market rapidly and in great numbers. The challenge is to identify those which offer the best chance of delivering. We are therefore taking a very pro-active approach to seeking out alternatives and putting them through their paces.

Working collaboratively with research partners (for example, Imperial College London and University College Dublin) we are determining the credibility of the products and how they might be working.

Starting at the laboratory level and progressing through glasshouse trials, we will then prioritise which products make it through to the final stage of replicated trials.



Our commitment is to fully explore the potential of BioSolutions and put sound science behind their development.

01 Our Sustainability Approach

02 Our Strategy – Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

> **The Business We Do – sustainable food production**

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Complementing our integrated approach

BioSolutions are used alongside traditional Plant Protection Products and other integrated Pest Management systems, allowing greater tailoring of dose rates and better resistance management. Our ongoing trials continue to push PPPs in a more environmentally sustainable way, while driving yield.

Our digital platform uses the latest soil scanning and imagery software to provide a detailed plan of live in-field variations and how this can be targeted through variable rate fertiliser, seed and in-field operations. Agrii's sustainable varietal scoring in wheat, barley and oilseed rape crops helps customers to select positive environmental and productivity attributes, while managing risk and expectations.

International dimension

In conjunction with the Science Foundation of Ireland, Origin, via the CONSUS project, is exploring wheat endophytes extracted from wild relatives of wheat across the globe to see if they have any activity on 3 important wheat disease targets – Septoria, Fusarium and Take-all.

We are also working with our partners, Fortgreen in Brazil, who have comprehensive laboratory facilities, managed by three post-doctoral students, who can compare different products capability to stimulate positive biochemical processes in plants.



BioSolutions may help farmers to produce crops in a sustainable and profitable way, going forward. The best of them will be very useful in Integrated Pest Management programmes.

STORIES OF IMPACT

FORTGREEN 'FIRST AGBIOTECH' PROJECT

An investment of R\$20m into a proprietary range of Bioprotectants and Biostimulants is planned over the next five years.

The BioSolutions market in Latin America is slated to grow exponentially, due to the current low adoption rates and an increased understanding of what benefits BioSolutions, particularly Bioinsecticides and Biofungicides, can offer. Recognising this, Fortgreen have created a state-of-the-art development suite of labs, growth chambers and glass houses, which they use to both create their own technology and to support other Origin businesses with testing facilities.



STORIES OF IMPACT

INTEGRATED PEST MANAGEMENT

Two year study supports increased role for biological fungicides in strawberries.



The number of synthetic fungicides required to control the main diseases in a strawberry trial was reduced by 58%, while crop quality improved through reduced plant stress.

A two-year trial performed by crop advisers and trials' specialists at Agrii has demonstrated the potential contribution biological products can make in maintaining high crop quality and yield, while controlling powdery mildew and storage rots in commercial strawberry production.

The trial, which was jointly supported by manufacturers Bayer Crop Science and Certis Belchim, incorporated commercially available biological fungicides into a

programme for comparison with one based entirely on conventional products. Until now, biological products have only been assessed in isolation.

The integrated programme performed impressively well. In both 2021 and 2022, strawberries produced under the integrated programme were bigger and heavier than those receiving only synthetic fungicides. There were no negative effects on firmness or Brix (dissolved sugar) scores either.

The trial proved that it is possible to meet yield and quality targets with the structured use of biologicals. However, this was not the only finding.

The shelf-life potential of the crops grown under the integrated programme, based on the effects of storage rots, was significantly greater. This will be of great interest to growers, buyers and retailers.

The reduced re-entry and harvest intervals associated with biologicals will be of considerable value to growers, allowing tighter crop harvests through the season. This means crops can be picked at optimum ripeness, which will support crop quality, as well as reducing the risk of infestations and disease.

Residue tests found zero residues in the integrated programme, while those in the conventional programme were within regulatory limits.

The trial will continue for an additional year, to generate further data and refine the programme before it is shared with growers and buyers.

In both 2021 and 2022 strawberries produced under the integrated programme were bigger and heavier than those receiving only synthetic fungicides.

Emily Dimond, Agrii Fruit Agronomist



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

> The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

The Business We Do - Supporting Outdoor Space Regeneration

Amenity Solutions

As urban environments become more densely populated, concern has grown over exposure to air pollutants, increased flood risk, poor quality rivers and lack of access to the natural environment.

Using our natural capital wisely, we can enhance ecosystem services to improve human wellbeing. For example, adding plants like trees to densely populated, urban environments, has been shown to improve mental wellbeing, as well as improving biodiversity and air quality, sequestering CO₂ from the atmosphere, and providing shade and local urban cooling.

Wildlife corridors

Origin's role and collaborations across agriculture, horticulture, amenity and urban landscapes, means that it is well placed to develop 'wildlife corridors' across large tracts of land. These wildlife corridors protect our natural capital and benefit biodiversity, as well as tackling climate change and improving soil health. [See page 37](#)

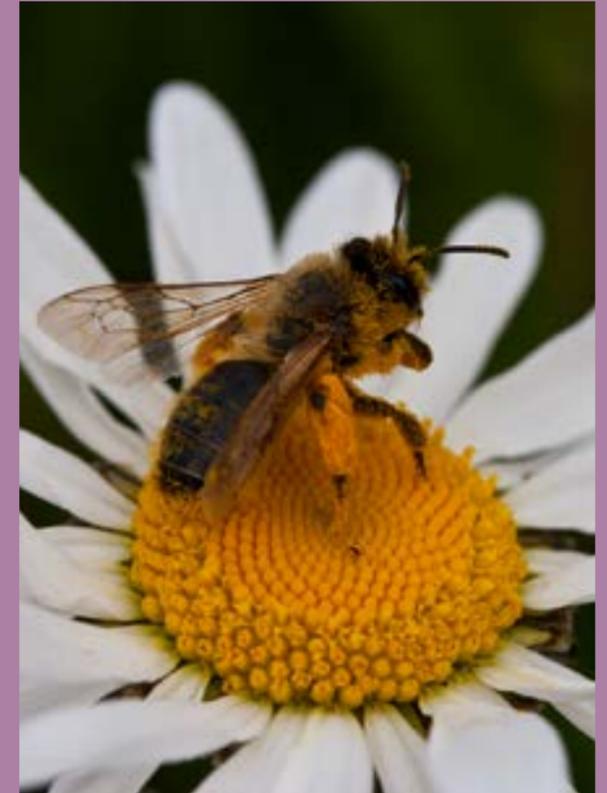
STORIES OF IMPACT

LANDSCAPES FOR POLLINATORS

The inclusion of wildflower mixes, through Green-tech and Rigby Taylor, is an important part of our outdoor space regeneration programme.

We developed our mixes, based on independent research by the Urban Pollinators Group, a national research programme run by Bristol, Edinburgh, Leeds and Reading Universities, which revealed that a range of mixes would be required to meet the complex ecological demands of diverse pollinator groups, throughout different stages of their life cycle, across the year.

We also work closely with landscape professionals, including those managing heritage landscapes, encouraging them to use mixes that will attract pollinators and improve biodiversity.



In 2022 Origin provided wild flower seeds to cover over 1,000ha of land in urban and amenity settings.

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

> The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

> The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations
Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Amenity Solutions – Carbon Sequestration

Turfgrass is often viewed as a high input landscape feature and, as such, has acquired a bad reputation, because of the negative consequences associated with high input management. However, it is important to recognise that the amenity sector in general does not remove the vegetation from the surfaces and as a result produces a constant canopy of grasses.

Grasses, just like trees, are chlorophyll-based plants, absorbing carbon dioxide (CO₂) from the atmosphere for use in photosynthesis, 'fixing' greenhouse gases from the air into the soil and providing oxygen as a by-product.

A proportion of the absorbed carbon is transferred from the dense canopy and fibrous root system into the soil as plants senesce and decompose.

Just two square metres of grassland can produce enough oxygen to support one person for an entire day and one hectare of natural grassland can sequester up to 2.5 tonnes of carbon per hectare, per annum, creating a net carbon sink held within the soil profile.

A golf course is approximately 110–200 acres of which only 25–50% of the area is intensively managed turf. The out-of-play areas within the course boundaries consist of varied ecosystems including woodland, grassland and aquatic areas, promoting biodiversity.

Origin amenity are working to offer integrated turf management plans to promote sustainable amenity turf management, whilst ensuring surface performance. We work with raw material suppliers to find innovative BioSolutions. For example, our Carbon For Grass seed range promotes carbon sequestration and our Eurflor wild flower range supports biodiversity.



STORIES OF IMPACT



In Origin Amenity Solutions we work in collaboration with industry partners to provide scientific data and innovative concepts to amenity turf management. Our top priority is helping the industry to produce first class playing surfaces, in a sustainable manner. It's about looking at sustainable practices and integrated turf management plans. We need to understand the vital role the industry can play in the fight against climate change. With extensive research into sportsturf and soil organic matter, we will gain much needed insight into what facilities can do to help mitigate climate change.

Agronomy and technical manager,
Kelly-Marie Clack

01 Our Sustainability Approach

02 Our Strategy – Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

> The Business We Do – supporting outdoor space regeneration

Enhancing biodiversity and protecting natural capital

How We Do Business – our operations

Climate Change

Reducing water usage and water stress

Waste reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Amenity Solutions – Green Roofs

Natural capital in urban settings provides multiple benefits: removing air pollutants, absorbing and storing carbon, reducing urban heat island effects and reducing flood risk, while improving water quality. Additionally, growing evidence is also showing a positive link between rich urban biodiversity and human health, due to its effect in the promotion of positive emotions.

- > As a result, the Green Roof industry is growing in both importance and status. Green Roofs contribute significantly to urban areas by increasing biodiversity in what would traditionally be wasted space.
- > Green roofs are sustainable through reducing heat loss in the winter and providing cooling effects in the summer whilst the plants remove particulates from the atmosphere and provide oxygen and shading. Biodiverse green roofs can be created at specification stage with the incorporation of key areas that are suitable habitats, for wildlife.
- > Green roofs have the ability to reduce and filter rainwater runoff with many sustainable drainage systems now having built-in attenuation, to absorb rainstorms and release the water slowly, preventing flash floods.
- > These sustainable drainage systems provided by Green-tech are also used in urban planting situations such as under trees, where they form a reservoir where they ensure that the trees are supplied with water. Additionally, mycorrhizae (a fungus used to enhance tree growth) can be added in these drainage cells, ensuring optimal establishment and survival and so improving the mental health of residents and enhanced wildlife networks through urban areas.



Enhancing Biodiversity and Protecting Natural Capital



Target:

Establish 1,000 miles of 'Wildlife corridors' throughout the UK by linking amenity, rural and agricultural land to improve biodiversity by 2030



KPI	Supporting Initiative	Measure	2022	2030
Improve biodiversity - exploring BioSolutions	Wildlife corridor project joining amenity, rural and agricultural land	Area converted to wildlife corridor	Commitment to set year-on-year targets to 2030	1,000 miles

Biodiversity through sustainable agronomy and BioSolutions

Origin understands the importance of protecting and enhancing our biodiversity across all of the Business We Do. We are working closely with our growers as they adjust to the requirements under the EU Green Deal and Farm-to-Fork Strategy to reduce Plant Protection Products by 50% by 2030.

We believe the most sustainable approach is to develop cultural control methods, alongside a blend of synthetic Plant Protection Products and naturally derived 'BioSolutions'. Many BioSolutions will be kinder to non-target organisms but research and trials are needed for their development. Our commitment is to fully explore the potential of BioSolutions and really put sound science behind their development.

Our sustainable agronomy approaches to improving soil health and resilience and nutrient use efficiency also benefit biodiversity, through improving soil and water habitats.

Wildlife corridor project

As Origin provides solutions to agriculture, amenity and urban landscapes, it is perfectly placed to create a network of wildlife corridors across the UK, with a target of 1,000 miles by 2030.

Origin understands that we can strengthen natural capital wisely and protect ecosystem services including enhanced wellbeing, through creating healthier habitats for plants and animals.

Wildlife corridors are strips of land that serve as travelling avenues for wildlife species between similar, yet sometimes fragmented, habitat areas. They provide important sources of food and cover for many species and can include ponds and wetlands.

To realise the 1,000 miles of wildlife corridors, Origin's environmental agronomist will advise on the green infrastructure needed and the continued management required, to restore land back to nature and reap the rewards from increased ecosystem services. In some areas the general public will also benefit from being able to explore quality natural areas, with an associated increased sense of wellbeing.



Origin understands the importance of protecting and enhancing our biodiversity across all of the Business We Do.

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do - sustainable food production

The Business We Do - supporting outdoor space regeneration

> **Enhancing Biodiversity and Protecting Natural Capital**

How We Do Business - our operations

Climate Change

Reducing Water Usage and Water Stress

Waste Reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

> **Enhancing Biodiversity and Protecting Natural Capital**

How We Do Business – our operations

Climate Change

Reducing Water Usage and Water Stress

Waste Reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Tree Protection

Green-tech is the largest supplier of tree planting equipment in the UK, supplying tree shelters to rural tree planting projects. The tree protectors supplied range from shrub shelters to tree spirals and provide the first line of defence from rabbits, deer and voles to create the ideal growing environment for the newly planted whips and hedge plants.



Within the past 12 months, Origin, through its Green-tech operations, has helped protect over 10 million newly planted trees.



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

> **Enhancing Biodiversity and Protecting Natural Capital**

How We Do Business – our operations

Climate Change

Reducing Water Usage and Water Stress

Waste Reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

STORIES OF IMPACT

CAYLERS FARM

Our current and ongoing work across farms focuses on enhancing existing habitats and developing interconnecting linear features, such as hedgerows and field margins. These benefit biodiversity, protect watercourses, provide shelter for livestock and store carbon. They provide a mosaic of linked habitats encouraging wildlife to travel, live and thrive.

An example of some great connectivity bringing biodiversity benefits is Caylers Farm, a 400ha mixed farm near Cambridge where over 14,000 metres of margins and hedgerows join up existing woodlands, ponds, grazed permanent pasture fields, as well as sown and created habitats.

Origin Environmental Agronomist, Beth Metson



How We Do Business - Environmental Management System

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing Biodiversity and Protecting Natural Capital

> How We Do Business – our operations

Climate Change

Reducing Water Usage and Water Stress

Waste Reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact



Target:

To develop a Group-wide Environmental Management System (EMS) by 2023

KPI	Supporting Initiative	2022	2025	2030
Implement Group wide EMS by 2023	> EMS	> Implementation underway across Ireland and the UK	> EMS in place	> EMS in use across the Group

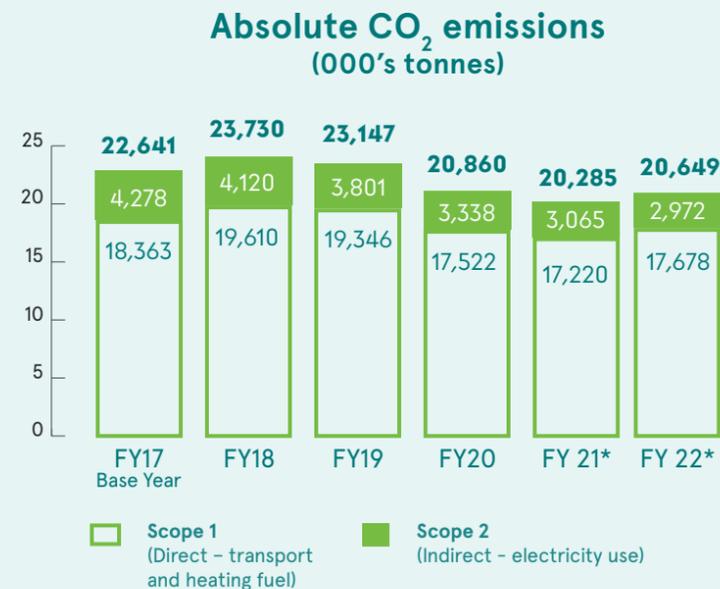


In 2022, we commenced the development of an EMS to an ISO14001 standard, to help the Group provide demonstrable, audited, internationally recognised certification for the quantification, monitoring and control of the environmental impacts of our operations, and to inform our future activities.

As part of the process, we are conducting a baseline review of all material environmental impacts in the UK and Ireland, which includes:

- > Scope 1 & 2 GHG emissions reduction; waste reduction, including packaging and plastics
- > Water usage reduction
- > Effluent treatment and water pollution reduction
- > Biodiversity improvement
- > Chemical management.

FY 2022 performance vs base year



-20%
water usage in FY22, compared to FY20



+38%
of the Group's purchased electricity supplied from verified renewable sources



-14.9%
decrease in fleet emissions from 2017-2022

-8.8% Absolute CO₂ emission reduction of 8.8% since 2017

* Scope 2 emissions restated to account for updated market based emission factors for reporting years FY20 and FY21

Climate Change



Targets:

Commitment to Science-Based Targets and Net Zero emissions by 2050, at the latest

Our commitment to reducing our environmental footprint and enhancing our sustainability credentials is an absolute. We do not currently have GHG emission reduction targets, as we are in the process of measuring our Scope 3 GHG emissions and aligning to the Science-Based Targets initiative (SBTi) to which we are committed.

We are on track to complete the analysis required for determining our targets across Scope 1-3, to be finalised in 2022, with targets verified by 2023.



KPI / Innovation	Measure	Baseline	2021	2022	2050
Commitment to SBTi	SBTi measures		Commenced work towards SBTi	Committed to the SBTi process to set measures and targets by 2023	SBTi targets met
Scope 1 emissions reduction	CO ₂ e tonnes	18,363 (2017)	17,220	17,678	Net Zero emissions
	% decrease in fleet emissions	- (2017)	11.2%	14.9%	Net Zero emissions
Scope 2 emissions reduction	CO ₂ e reduction	4,278 (2017)	3,065	2,972	Net Zero emissions
Scope 1 & 2 emissions reduction	CO ₂ e reduction	22,651 (2017)	20,285	20,649	Net Zero emissions
Scope 3 emissions reduction	CO ₂ e reduction	Baseline exercise in progress			Net Zero emissions

In order to set and verify Scope 1-3 GHG emission targets by 2023, we will adopt a phased approach, focusing on:

1. Measure Scope 1, 2 and 3 emissions
2. Set Targets
3. Verify the Targets
4. Develop Low Carbon Plan.

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing Biodiversity and Protecting Natural Capital

How We Do Business – our operations

> Climate Change

Reducing Water Usage and Water Stress

Waste Reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing Biodiversity and Protecting Natural Capital

How We Do Business – our operations

> **Climate Change**

Reducing Water Usage and Water Stress

Waste Reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

In 2022, our absolute CO₂ emissions (CO₂e) were 20.6 (000s tonnes), reflecting a 5% decrease on the Group's 2017 baseline, albeit a reversal on prior year performance as emissions increased by 6%. This was primarily attributable to a strong trading performance across all three reporting geographies, delivering a 41.3% increase in Group revenue versus prior year. FY2022 performance is set against the challenging trading environment of the previous two years where operations were impacted by disruptions arising from pandemic restrictions and adverse weather in the Group's largest market.

While absolute emissions increased, the Group recorded a 24% reduction in carbon intensity over the same period (a 38% decrease from the 2017 baseline), driven by Group revenue.

Despite a rise in emissions from the previous year, Origin is committed to reducing its footprint through a targeted Low Carbon Plan, currently being finalised as part of the Group's SBTi commitment. The Plan will centre on a robust Roadmap to achieve our SBTi ambitions, which for Scope 1 and 2 will include energy efficiency improvements and a coordinated move to decarbonise. Where appropriate, this will involve electrification for logistics and the Group's car fleet.



At Origin, we unequivocally support the Paris Climate Accord and actions consistent with ensuring that global temperatures rise by at most a maximum of 1.5°C.

Key Performance Indicators 'KPIs'

Absolute CO₂e emissions reduction

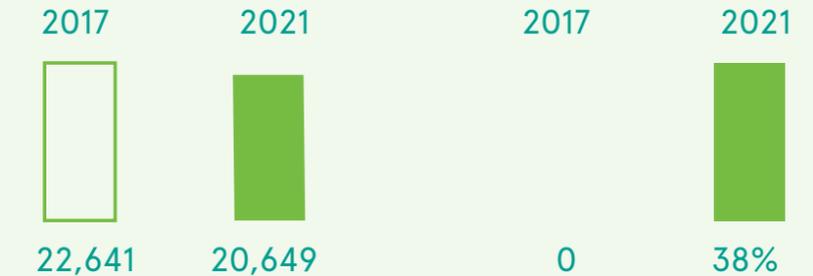
% of electricity used from renewable sources

Performance Year ended 31/07/2022

8.8%
(20,649)

38%

Performance Historic Result



Our target is to source 100% of all our electricity across our Ireland and UK facilities from renewable sources by 2023. For the rest of the world our target is to achieve this by 2027.

In 2022, Agrii UK replaced 13% of its van fleet with a combination of fully electric LDV Maxus vans (20% increase in payload) and Renault Zoe E-Tech vans. Agrii UK have orders in place to increase the electric van fleet to 25% in 2023.



01 Our Sustainability Approach

02 Our Strategy – Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing Biodiversity and Protecting Natural Capital

How We Do Business – our operations

> Climate Change

Reducing Water Usage and Water Stress

Waste Reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Alignment with the Paris Agreement makes the SBTi an excellent framework for our future business direction. We are following the guidance provided by the SBTi to develop robust and credible goals and set targets, through a phased approach, building on Scope 1 & 2 GHG emissions performance to date. We expect the analysis for determining our targets across Scope 1-3 to be finalised in 2022, with targets verified by 2023.

Through our Science-Based Targets and actions it is our ambition to deliver solutions for protecting and restoring nature and reducing climate change. A core team has been established, reporting into the Group Sustainability Committee. [See page 11](#)

The Environmental Footprint Group has been tasked with the analysis of our footprint and the provision of a clearly defined pathway to deliver on this ambition and the Paris Agreement.

Scope 3 Assessment

During the year we appointed external advisors, Davy Horizons and Pré to conduct a value chain Scope 3 assessment.

Our provisional results have identified that our Scope 3 GHG emissions hotspots derive primarily from purchased goods (fertiliser /raw materials in particular), capital goods and upstream and downstream transport (including agronomist and fleet transport).

To deliver a meaningful reduction in GHG emissions requires significant behavioural changes across our value chain and necessitates cross-sector, cross-industry and government partnerships. To set and achieve our Scope 3 carbon emissions and value chain carbon targets, we will:

- > Partner with our suppliers
- > Re-focus on our on-farm advisory support and communications
- > Adapt reporting tools, reflecting the service nature of Origin's on-farm business model.

Concurrently, from 2022/23, we will undertake NUE measurements with our sponsored farmers in the YEN Zero project, to see if there is a correlation between high NUE and low GHG crop intensity.

Task Force on Climate-Related Financial Disclosures (TCFD)

In order to be proactive and resilient in the face of climate change, in 2022, we started a climate risk and opportunity analysis, based on the framework of the TCFD. This is a holistic approach with the aim of broadening our understanding of the climate-related risks and opportunities we are facing as a company and addressing stakeholders' expectations regarding climate risk mitigation and adaptation. We have mapped climate risks and opportunities across our value chain and global activities and assessed the climate scenarios to ascertain their future materiality for us.

Our Climate Scenario Analysis takes the following into consideration:

- > Physical risks such as extreme weather events and sustained high temperatures and rising sea levels. These could damage farmland and cropping areas, cause water stress and affect production and distribution facilities.
- > Transitional risks such as industry regulation and change in market conditions or consumer expectations. Complying with laws can require an increase in associated costs and investments and changes in consumer preferences could result in lower demand for traditional agricultural products. Origin needs to adapt to this new context, to avoid a reduction in sales volumes.

Scenarios have been developed from a qualitative point of view and we are in the process of quantifying their impact on metrics such as Group and Unit revenues and margins.

Committing to Science-Based Targets (SBTi)

A step-by-step process



Commit



Develop



Submit



Communicate



Disclose

Reducing water usage and water stress



Target:

To reduce water usage and protect water quality

KPI	Supporting initiative	Measure	2021	2022	2023	2030
Protect water quality	Improve spray targeting through operator training	Ensure that those who apply product are fully trained each year on the latest legislation, with a focus on how to maximise Plant Protection Product performance and reduce the risk to water and non-target organisms	100 sprayer operator workshops held	100 sprayer operator workshops held	Roll-out to Central European market	75% of all operators in our CE markets to undertake training
Reduce water usage	Water usage % reduction	Litres used % reduction	37.5 million litres (22% reduction on FY20 base year)	38.6 million litres (20% reduction on FY20 base year)		TBC in 2023 pending further analysis



We trained 1,000 spray operators in the UK to help protect water quality in FY22.

Fresh water is part of our Natural Capital and is crucial for biodiversity and for humanity – for drinking, washing, cooling, recreation and well-being, in industrial processes and many other activities, including of course, farming. It must be utilised efficiently and its quality protected.

However, Climate change and an increasing global population, mean that it is likely to become a scarcer commodity in the future. The vagaries of the weather in 2022 illustrated the risks perfectly, with many parts of Europe experiencing drought conditions.

According to the UK Climate Change Risk Assessments (UKCCRA) water events will be more intense, with high quality arable and horticultural land likely to be flooded once every three years, increasing to 130,000 ha by the 2080s (current annual flood average is 30,000 ha in England and Wales). Nutrient run-off will increase the risk of polluting local water sources and depleting soil, as a resource.

Conversely, the UKCCRA predicts southern, eastern and central England will see increased demand for irrigation water of 80% by the 2050s and 110% by the 2080s.

Reducing our total water usage

In FY2022, Origin’s overall water consumption increased by 2% on the prior year to 38.6million litres, driven by increased demand for plant protection products and contract crop spraying services during the key application periods.

While usage increased on prior year, we are committed to protecting fresh water supplies and water dependent ecosystems and we continue to deliver best practice training and encourage initiatives to conserve and reuse water volumes. Due to the remote locations of certain facilities, we are currently undertaking a data gathering exercise to improve the quality of information on water use within our operation, with the aim of setting water reduction targets in 2023.

01 Our Sustainability Approach

02 Our Strategy – Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing Biodiversity and Protecting Natural Capital

How We Do Business – our operations Climate Change

> Reducing Water Usage and Water Stress

Waste Reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing Biodiversity and Protecting Natural Capital

How We Do Business – our operations
Climate Change

> **Reducing Water Usage and Water Stress**

Waste Reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Promoting Water Use Efficiency

IrriQuest, a service offered by Origin in the UK, Romania and Poland assists growers in the efficient use of water for irrigation.

It uses a number of technologies, such as capacitance probes to give a direct measurement of soil moisture state throughout the profile, providing a near real-time view of soil moisture dynamics. Data shows where the roots are actively using soil moisture and to what depth rainfall and irrigation infiltrates.

This can then be used to implement precision irrigation as and when it is required, on a crop-by-crop basis.

Technological Solutions for Water Use Efficiency

Other technical solutions currently under evaluation are:

- > **Products that can aid soil wetting** and moisture availability to crops, reducing run-off when rain falls onto soils that have become so dry, they 'shrug off' water, rather than allowing it to penetrate.
- > **Agronomic approaches to combating drought** such as:
 - Better variety choice via the Variety Sustainability Rating
 - The use of Biostimulants and Growth Regulators to enhance root development so crops can better exploit moisture at depth
 - Foliar Nutrition to promote Green Leaf Area to maximise photosynthesis.
- > **Efficient use of water during spray application.** Plant protection products are usually diluted with large volumes of water before they are applied to crops by field sprayers. This can use vast amounts of water, often in the spring or summer when droughts are beginning to bite and water is scarcer. Through improving the techniques used by the sprayer operator, these water volumes can often be decreased. But whereas in the UK, comprehensive sprayer operator training has helped promote water use efficiencies, in other parts of Europe there is a need to upskill our farmer customers.



As part of our sustainability commitments, Origin is looking to extend sprayer operator training across all the geographies in which we operate. This will have the added benefit of helping to reduce drift and protect water courses.

Sprayer Operator Training – Spray Application and Water Protection Workshops

- > In addition to ensuring that our products are applied correctly, they ensure that operators are protecting water courses and reducing water use.

We aim to go beyond the standard course produced by the City and Guilds Land-Based Services, to offer additional information, derived from our extensive R&D programme. The training covers areas related to environmental protection and maximising cost and time efficiencies in the field:

- > **How to reduce drift and protect water courses**, using the correct nozzles and spray additives
- > **How to typically halve water use, through the use of lower spray volumes**
- > **How to optimise pesticide dose rate**, through better targeting, nozzle selection and appropriate adjuvant use, minimising any negative effects on non-target species
- > **Specific advice on farmyard spray filling areas** and the use of biobeds and biofilters to treat tank washings, minimising point source contamination that might find its way to a water course
- > **How to use grass and wildflower strips around fields**, as a buffer and to protect water courses around the edges.



100

Agrii UK runs 100 workshops each year with c.1,000 sprayer operators attending.

Waste reduction



Targets:

- > To have zero waste to landfill in the UK and Ireland by 2025
- > To have waste recycling programmes in place across the rest of our world operations by 2025
- > To increase the use of recycled content in our own packaging

KPI	Measure	2021	2022	2025
Zero waste to landfill in UK and Ireland by 2025	% waste to landfill	66%	59%	0

Origin's goal is to divert as much non-hazardous waste as possible from landfill, and ensure all hazardous waste is treated appropriately and, as a minimum in accordance with all regulations concerning the safe and responsible management of waste materials.

In FY 2022, the overall tonnage of waste generated across the Group increased by c.1% compared to the prior year. The increase primarily reflects a strong volume performance across seed and crop protection portfolios, in contrast to the previous two years, which were impacted by extreme weather and COVID-19 and supply chain disruption. Encouragingly, over the period, local initiatives to prevent, reuse and recycle waste materials has resulted in a 13% increase in the amount of waste diverted from landfill. Work to improve the quality of waste data remains ongoing as we complete our baseline exercise throughout the Group.

In 2021, the Group set a target to achieve zero waste going to landfill across its operations in the UK and Ireland. In FY2022, the amount of waste sent to landfill reduced by 7% to 59% for the UK and Ireland. In order to achieve our target of zero waste, we understand that more work is required to accelerate the pace of progress.

As part of our broader objective to reduce waste throughout all Group operations, we have set a target to have waste recycling programmes in place across our rest of world operations by 2025.

Packaging

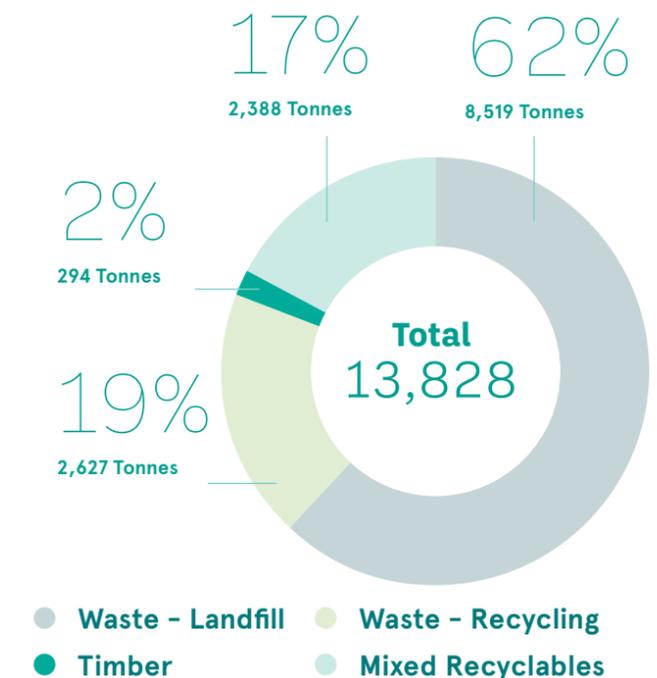
The removal of virgin plastics in packaging is also a focus for Origin, considering the Worldwide Responsible Accredited Production (WRAP) requirements and changing regulations. We understand the growing global concern with single-use plastics and are exploring ways to either reduce plastic packaging or increase its reuse and recycling. The Group welcomes initiatives and partnerships to support its goals. For example, Origins Irish fertiliser division Goulding, is a member of the Irish National Plastic Packaging Group.

In addition, in FY2022 Origin fertilisers UK launched its new fertiliser bags made from 30% recycled plastics.



We are committed to embedding circular principles and adopting best practice to effectively manage waste streams within our own operations.

FY22 Group Waste Source



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing Biodiversity and Protecting Natural Capital

How We Do Business – our operations Climate Change

Reducing Water Usage and Water Stress

> Waste Reduction

Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

Collaboration and comprehensive research

Our research and innovation programme is the cornerstone of our sustainability strategy.

The Group's R&D capabilities span the full spectrum of our business operations, with a highly qualified and experienced core research team complemented by our in-field applications group.

We aim to:

- > Create the sustainability solutions and products to meet the present and future needs of our customers
- > Position Origin as the benchmark for sustainable food production and emerging nature economy.

Our desire to advance innovation and accelerate the adoption of sustainable practices, motivates us to collaborate with industry and academic partners across all our markets.

We work closely with suppliers and manufacturers, investing our own Research & Development into new and emerging trends in the marketplace. This ensures we are well positioned to respond in a timely manner, with an integrated solution that meets needs across industry, the environment and our society.

External participation and collaboration



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing Biodiversity and Protecting Natural Capital

How We Do Business – our operations

Climate Change

Reducing Water Usage and Water Stress

Waste Reduction

- > Collaboration and comprehensive research

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

STORIES OF IMPACT

YEN ZERO

The Yield Enhancement Network (YEN) is an ADAS initiative that connects agricultural organisations and farmers who are striving to improve crop performance.

In July 2021, ADAS created the net-zero community, bringing important players from across the UK agricultural industry together, to meet the industry's target of achieving net zero emissions by 2040.

Through our Origin Fertiliser and Agrii operations, we are delighted to be part of a collaborative group of sponsors working with ADAS to help close the gap between current and potential on-farm performance. Participating in the net-zero community enables us to provide the most scientifically robust information for calculating on-farm greenhouse gas emissions and employing mitigation strategies.

The initiative focuses on the analysis and benchmarking of combinable and forage crop carbon footprints on a per-field basis. The aspiration is to grow this into carbon accounting on a whole-farm scale. The benchmarking of crop greenhouse gas intensities enables fair and easy comparison of emissions between farms, fields and crops. From here, growers can learn about which mitigation strategies have the most potential to reduce the environmental impact of their crop management systems.



STORIES OF IMPACT

FIELD OF THE FUTURE PROJECT

In 2020, Agrii launched a 'field of the future' project to explore just how possible it is to grow a high yielding crop, whilst managing to reduce our conventional inputs. Using a combination of cultural controls and digital tools, we are developing evidence for the practical implementation of agro-ecological principles, to help our customers produce food in harmony with the environment.

Varieties and inputs over different cultivations

Working in collaboration with leading research organisations such as the Centre of Ecology and Hydrology (CEH), we are able to explore the 'unseen' impacts of farming practices, which could have a large impact on the efficiency of production.

At our regenerative farming trial site in County Durham we compared a conventionally farmed soil which is inverted annually with one using a regenerative approach.

The aim was to understand whether varieties and BioSolutions perform differently in a more biologically active soil resulting from reduced soil disturbance, to help inform the best agronomic decisions.

Additional Projects:

- > How cover crops can be utilised as part of a sustainable system to help improve soil resilience – retaining moisture, boosting soil carbon and improving crop health
- > How the advancement of breeding technologies impacts on the association of plant roots with the soil microbiome
- > Bi-cropping oats and beans to help with nitrogen fixation
- > Methods of improving soil organic matter, without access to organic manures
- > The benefits and barriers of the regenerative transition period on heavy land.



A regenerative farming trial at our site in County Durham – **Agrii Innovation Awards winner 2021**

01 Our Sustainability Approach

02 Our Strategy – Nurturing Growth

NURTURING OUR ENVIRONMENT

Overview

The Business We Do – sustainable food production

The Business We Do – supporting outdoor space regeneration

Enhancing Biodiversity and Protecting Natural Capital

How We Do Business – our operations
Climate Change

Reducing Water Usage and Water Stress
Waste Reduction

> **Collaboration and comprehensive research**

NURTURING OUR SOCIETY:

How We do Business responsibly

03 How We Organise For Impact

- 01 Our Sustainability Approach
- 02 Our Strategy - Nurturing Growth
 - NURTURING OUR ENVIRONMENT**
 - NURTURING OUR SOCIETY:**
How We do Business responsibly
 - Introduction
 - Empowering our people
 - Implementing our Health, Safety and Well-being Roadmap
 - Sustainable land use
 - Local community engagement
- 03 How We Organise For Impact

NURTURING OUR SOCIETY

CONDUCTING BUSINESS RESPONSIBLY



We are committed to developing and empowering our people and to supporting the communities where we operate.



Introduction

The COVID-19 pandemic has challenged Origin and our customers in ways we could never have foreseen. While COVID-19 restrictions eased during the year, we have continued to implement a stringent health and safety programme and have adapted how we work and live, in response to the human and wellbeing challenges posed by the pandemic. As a result of these changes, we believe Origin has emerged stronger and more resilient. Through 'Nurturing Our Society' we are committed to leveraging how we do business in pursuit of the principles of the Global Compact and to advancing the broader development goals of the United Nations, particularly the Sustainable Development Goals (SDGs). We see the greatest opportunity for impact with SDGs 2, 5, 8, 12, 13 and 15 - of which SDGs 2, 5 and 8 pertain to our societal programme.



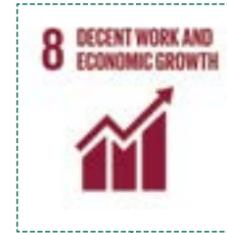
While COVID-19 restrictions eased during the year, we continued to implement our stringent health and safety programme and have adapted how we work and live in response to the human and wellbeing challenges posed by the pandemic.

- 01 Our Sustainability Approach
- 02 Our Strategy - Nurturing Growth
 - NURTURING OUR ENVIRONMENT**
 - NURTURING OUR SOCIETY:**
How We do Business responsibly
 - > Introduction
 - Empowering our people
 - Implementing our Health, Safety and Well-being Roadmap
 - Sustainable land use
 - Local community engagement
- 03 How We Organise For Impact

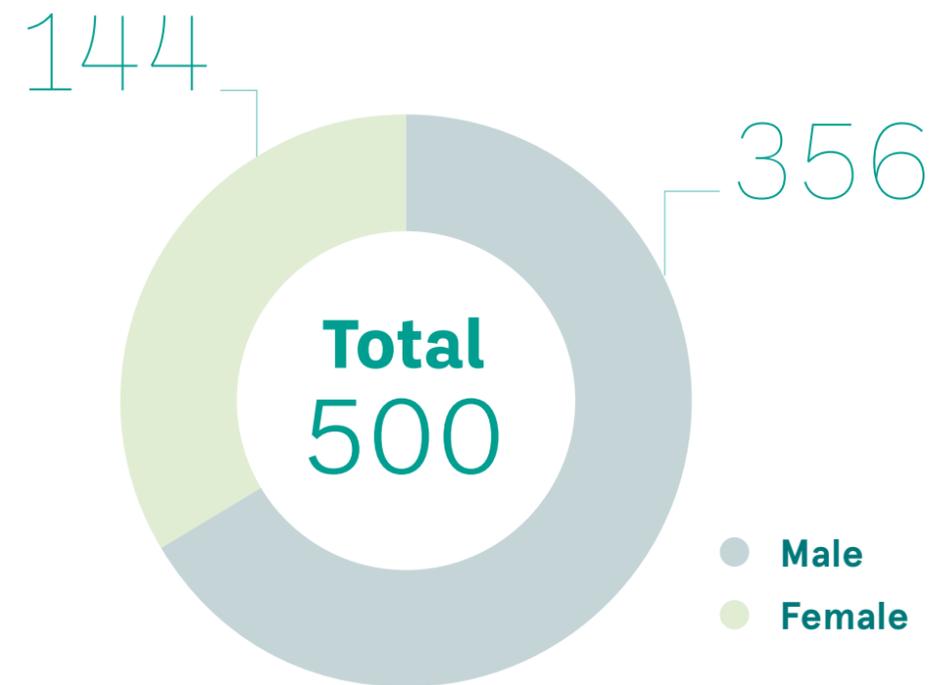


- 01 Our Sustainability Approach
- 02 Our Strategy - Nurturing Growth
 - NURTURING OUR ENVIRONMENT**
 - NURTURING OUR SOCIETY:**
How We do Business responsibly
 - > Introduction
 - Empowering our people
 - Implementing our Health, Safety and Well-being Roadmap
 - Sustainable land use
 - Local community engagement
- 03 How We Organise For Impact

The personal commitment and expertise of our teams are central drivers of success for Origin. Through our Integrated Group People strategy and programmes, we are committed to offering our people secure prospects and the opportunity to develop personally and contribute to the 'Nurturing Growth' strategy. We are committed to offering a broad range of future oriented jobs with attractive conditions. In 2022, the total number of Origin employees was 2,643 - of which 500 were new starters. We wish to welcome these new colleagues to the Group.



Total Number of new starters during period 1 August 2021 - 31 July 2022



“The personal commitment and expertise of our teams are central drivers of success for Origin.”



Empowering our People

Values drive Integrated Group People strategy

Our values are the central, underlying philosophies that guide the business. Our five core values, which make up 'The Origin Way' define who we are as an organisation and they are the guiding principles for how we should interact.

A key factor of employee engagement is the culture and values of an organisation, and over 89% of those who completed our annual employee survey believe our values are clear and 91% are proud to be associated with the company.

Origin Group Integrated People Strategy

We are continually working to create an environment that enables our employees to reach their potential and be their personal best. Our aim is to foster a culture where all colleagues feel valued, supported, developed, respected, and fully engaged. Our Integrated People Strategy, which is a Group and local Business Unit approach, is built on six strategic pillars (see page 53). Origin has developed six deliberate and sustained programmes to enhance our employee wellbeing, motivation, retention, education, and development to support the delivery of our strategic plan, purpose, and vision.

Our core values



We commit to the highest standards of ethical behaviour and living our values.

Living our values creates an environment that will enable us to deliver success for our people, our customers, our partners and our community.

- 01 Our Sustainability Approach
- 02 Our Strategy - Nurturing Growth
 - NURTURING OUR ENVIRONMENT**
 - NURTURING OUR SOCIETY: How We do Business responsibly**
 - Introduction
 - > **Empowering our people**
 - Implementing our Health, Safety and Well-being Roadmap
 - Sustainable land use
 - Local community engagement
- 03 How We Organise For Impact

Six strategic pillars

- 01 Our Sustainability Approach
- 02 Our Strategy - Nurturing Growth
 - NURTURING OUR ENVIRONMENT**
 - NURTURING OUR SOCIETY: How We do Business responsibly**
 - Introduction
 - > Empowering our people
 - Implementing our Health, Safety and Well-being Roadmap
 - Sustainable land use
 - Local community engagement
- 03 How We Organise For Impact

Our Goals

	 <p>The Origin Way Living our Values and People Policies</p>	 <p>You make our difference Our commitment to Equality Diversity and Inclusion</p>	 <p>Let's Talk Employee Voice and Engagement</p>	 <p>Origin IQ Developing the skills of our People</p>	 <p>LEEP Developing Leaders of Tomorrow</p>	 <p>My Wellbeing Maintaining safe, positive and supportive working and environments</p>
	<p>Our five core values which make up 'The Origin Way' define who we are as an organisation.</p> <p>They are the guiding principles for how we should interact, every day. Our Executives/Leaders are committed to our values. They will lead by example and be a visible role model, inspiring and motivating their teams to achieve success together by living our values.</p> <p>What we say is what we do.</p>	<p>We aim to foster a diverse and inclusive culture, that attracts and develops diverse talent and creates a workforce that mirrors society and understands its diverse needs.</p> <p>We are an organisation where diverse talents come together and we will work hard to ensure all our colleagues feel valued and included and have a sense of belonging.</p> <p>Diversity and Inclusion flows through all we do.</p>	<p>Employee engagement is critical to our success.</p> <p>We will encourage a culture of open communication and ensure that we have input from across our Business, from every level of the workforce, enabling Business decisions to take account of employee views. We will continually review our employee experience and identify where we can improve.</p> <p>We measure and benchmark our engagement performance.</p>	<p>We will continually invest in our people, creating future-focused training programmes to ensure all employees have appropriate training and qualifications to successfully deliver in their role.</p> <p>We will ensure our employees have easy access to training and development opportunities.</p> <p>All employees will receive an annual review and personal development discussion.</p>	<p>We are committed to training and developing our people and recognise the importance of progressing individuals through continuous learning and development.</p> <p>We will continually work to ensure the identification and development of leadership abilities across the Group.</p> <p>This is a key part of our succession planning and preparing our Business for the future.</p>	<p>We are committed to embedding wellbeing at Origin to foster a culture which enables, supports and encourages all employees.</p> <p>We will continue building, improving and maintaining safe, positive and supportive working and environments, where employees have access to support resources and are supported by Managers who live our values.</p>
	<ul style="list-style-type: none"> > We will ensure that our values are visible and recognised in each Business across the Group. > We will ensure that all Executives/Leaders will lead by example and act as visible role model for our values. > We will provide recognition for those who demonstrate excellence and live our values 'Values in Action'. > We will implement a Code of Conduct, and the relevant policies supporting it, to outline the standards expected of everyone who works for us, in all of our businesses. > We will ensure all the requirements of the UN Global Compact covering Human Rights, Labour and Anti-Corruption are met in all of our businesses. > We will support our community by supporting local initiatives that are aligned to our Vision, Purpose and Values. 	<ul style="list-style-type: none"> > We will implement and embed an Equality, Diversity and Inclusion Policy across the Business and ensure it is accessible to all our employees. > We will provide training covering Inclusive Leadership to all Executives/Leadership teams. > We will ensure that Executives/Leaders agree key actions in their Business to enable an inclusive culture. > We will embed Equality, Diversity and Inclusion into our HR policies and people practices. > We will ensure all employees and managers receive Diversity and Inclusion and Unconscious Bias training. > We will implement a Group-wide Equality, Diversity, Inclusion, Wellbeing and Community calendar, covering monthly activities and information. > We will review and implement Hybrid Working Principles, where it is practically and operationally possible. 	<ul style="list-style-type: none"> > We will implement all the elements of our Integrated 'Let's Talk' Employee Voice and Engagement Programme at a Group and Business Unit level. > We will continually review and work to improve the Employee Experience, including across the 13 categories that we measure. > We will measure and benchmark our Employee Engagement performance. 	<ul style="list-style-type: none"> > We will ensure all employees have appropriate training and qualifications to deliver in their role. > We will respond to immediate operational and essential skills gaps to support employee development and individual and organisational performance and growth. > We will support our colleagues in achieving their personal goals. > We will ensure that all employees have an Annual Review (which includes a Personal Development Plan). 	<ul style="list-style-type: none"> > We will ensure that all people managers and those with management responsibility (existing and new) receive management training. > We will implement our defined leadership competencies in each of our businesses. > We will identify and develop key leadership abilities across the Group to develop our employees and prepare them for future roles. > We will implement a Group-wide Leadership Development Programme. 	<ul style="list-style-type: none"> > We will make sure our workplace environments support our wellbeing aims. > We will ensure we have key underpinning policies in place that support our wellbeing focus, such as Flexible Working and Hybrid Working. > We will deliver initiatives throughout the year in line with our wellbeing calendar. > We will develop the skills of our HR and Management teams, so they are equipped to fully support their workforce.



2022 progress update:

Launch of Values programme - including recognition schemes for those who demonstrate excellence and live our values: 'Values in Action' ✓

Group Code of Conduct implementation programme - setting out principles and behaviours for all team members (Board, management, and employees) ✓

Hybrid Working Principles implemented - where practical and operationally possible ✓

Inclusive Leadership training launched ✓

A Group-wide calendar of events covering Diversity, Inclusion, Wellbeing and Community activities ✓

Annual measurement and benchmarking of employee engagement performance ✓

Business Unit action plans to improve the Employee Experience ✓

Delivery of 26 Leadership or Management training programmes ✓

118 training sessions (to support our employees to successfully deliver in their roles), including the Origin Training Academy ✓

Three 'Let's Talk' visits took place throughout the year ✓

Six workshops with our Executive and Leadership teams to support and enable individuals to effectively operate as inclusive leaders. ✓



The 'Let's Talk' Visit at the Origin Fertilisers Newport site in June.

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY: How We do Business responsibly

Introduction

> Empowering our people

Implementing our Health, Safety and Well-being Roadmap

Sustainable land use

Local community engagement

03 How We Organise For Impact

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY:

How We do Business responsibly

Introduction

> **Empowering our people**

Implementing our Health, Safety and Well-being Roadmap

Sustainable land use

Local community engagement

Employee Engagement

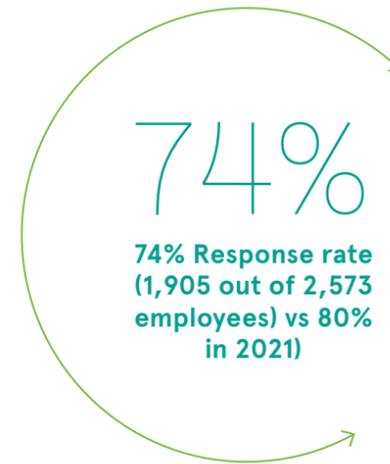
We are continually working to create an environment that enables our employees to reach their potential and be their personal best. Sustainable engagement is a critical component of this, and our consistently high response rate in respect of our annual employee opinion survey together with our high employee sustainable engagement score demonstrate that we create an environment that supports productivity and promotes wellbeing.

Since we commenced Group-wide employee surveys in 2019, the results consistently show that our employees are proud to work with Origin. We had a 74% Response Rate in 2022, and while lower than 2021, our total favourable score increased from 90% to 91% when we asked if our employees are proud to be associated with this company. The results indicate significant improvements in three categories - Diversity and Inclusion, My Manager and Teamwork and Collaboration. We also noted increased openness and evidence of more collaboration within teams, with employees saying they are more comfortable posing challenges around different ways of working and enjoying improved collaboration across departments. While the results showed no change in key drivers of employee engagement (Wellbeing, Leadership and Development and Growth), we have identified the extent to which employees feel connected to their teams and understand how their work contributes to the Company's business objectives is another key driver of employee engagement at Origin. This is an area that we will continue to focus on. When employees were asked if they would recommend Origin as a good place to work, we were pleased to have maintained our 88% favourable score.

Perceptions of leadership improved further to 87%, with employees reporting a clearer understanding of the goals and objectives of the Origin Group, as well as the company values.

While we are pleased with an overall sustainable engagement score of 89%, we will continue to improve our work environment, feedback mechanisms and employee experience at all levels. We continually focus on the 13 categories measured, through key enablers such as our training programmes, policies and practices.

Highlights from our 2022 survey include:



Our ambition for 2023 and beyond

88%

recommend Origin as a good place to work

- Significant improvements in three categories:
- > Diversity and Inclusion
 - > My Manager
 - > Teamwork and Collaboration

89%

Sustainable engagement Score

- Employees identified three key drivers of employee engagement to focus on:
- > Wellbeing
 - > Leadership
 - > Development and Growth

<p>14 weeks Survey Administration 12th Jan – 28th Feb and 16th May – 1st July</p>	<p>3 External Benchmarks used for results analyses: • Global Agricultural and Crop Science Norm • Global High Performance Norm • National Norms</p>
<p>13 Survey Design Let's Talk Survey: • 13 Categories • 61 Opinion questions • 4 Open comment questions</p>	<p>34 Demographic questions including: Organisational Hierarchy, Business Unit, Function, Country, Region, Age, Gender, Tenure, Level/Grade, Manager/Non-Manager</p>
<p>6 COUNTRIES 5 Languages</p>	<p>74% Response Rate 1,905 out of 2,573 employees</p>
<p>Split into 2 phases</p>	<p>1 Final combined set of results</p>

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

**NURTURING OUR SOCIETY:
How We do Business responsibly**

Introduction

> **Empowering our people**

Implementing our Health, Safety and Well-being Roadmap

Sustainable land use

Local community engagement

03 How We Organise For Impact

We are also committed to training and developing our people and we recognise the importance of progressing individuals through continuous learning and development. This is an important part of our succession planning and preparing our business for the future.

Origin survey results outperform the sector benchmark across a number of areas measured.

'Let's Talk'

We encourage a culture of open communication through our Group-wide Employee Voice and Engagement Programme, 'Let's Talk'. Our 'Let's Talk' programme ensures we have input from across our business and from every level of the workforce, enabling business decisions to take account of employee views.

'Let's Talk' is designed to ensure that we connect, engage, and have meaningful two-way dialogue with all our employees on topics such as, our strategic direction, key initiatives, challenges, our culture and the work environment. Our annual employee survey is a vital element of 'Let's Talk'. We also conduct visits, local listening initiatives and regular 'Town Hall' meetings.



We encourage a culture of open communication through our Group-wide Employee Voice and Engagement Programme 'Let's Talk'.



In June, the Origin Fertilisers Newport site hosted a 'Let's Talk' event.

Implementing our Health, Safety and Wellbeing (HSW) Roadmap

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY:

How We do Business responsibly

Introduction

Empowering our people

> **Implementing our Health, Safety and Well-being Roadmap**

Sustainable land use

Local community engagement

03 How We Organise For Impact



Targets:

Target a reportable incident rate <6

The health, safety and wellbeing of our employees, as well as the quality of our products and services, is our top priority. During 2022 we continued to invest in a Group-wide approach to ensure a robust and resilient health and safety culture within Origin.

In June 2022 we appointed a Group Head of Health and Safety, a new role which will be instrumental in sharing best practice, ensuring comparable standards across all our business units, improving our safety culture, and ensuring compliance globally.

Compliance with relevant national risk management requirements, as well as voluntary accreditation schemes, where applicable means we can evidence the highest standards in our products and services, in our advice to customers, and in our safety and quality standards.

In UK and Ireland, for example, this includes:

- > Compliance with Control of Major Accident Hazards (COMAH) requirements, which relate to risks from dangerous substances. Across the UK and Ireland businesses we have two top tier and 15 lower tier COMAH sites
- > BASIS accreditation for our agronomists and for our chemical stores and storekeepers
- > Fertiliser Industry Assurance Scheme (FIA) compliance for production, storage, supply, and transportation of fertilisers
- > Seed assurance schemes such as the European Seed Treatment Assurance (ESTA) and the Trade Assurance Scheme for Combinable Crops (TASCC).

Part of our compliance strategy is to ensure all our employees are competent in health and safety as relevant to their role. Ensuring competence is integral to the employee journey and our People policies, starting during induction training and encompassing certified training where needed, for example for forklift truck operators, as well as regular toolbox talks at operational team level. Our UK and Ireland-based businesses use e-learning platforms to provide Health and Safety training to new starters and at regular periods during employment. There are two main platforms in use, each providing specific topic modules which are allocated according to job role. In FY22, our main learning platform, iHasco, had an over 80% completion rate for allocated Health and Safety modules. Going forward, the planned introduction of a Training Management module in our Environmental, Health and Safety (EHS) software will mean we can gain greater insight into the success of our safety training programmes across all Business Units.



Each business unit has an integrated health and safety management system, which is steered by dedicated health and safety teams.

8 DECENT WORK AND ECONOMIC GROWTH



Members of the Fortgreen team undertaking fire safety training and fire drill exercises

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

**NURTURING OUR SOCIETY:
How We do Business responsibly**

Introduction

Empowering our people

> **Implementing our Health, Safety and Well-being Roadmap**

Sustainable land use

Local community engagement

03 How We Organise For Impact

Health and Safety Performance

There were no employee fatalities during the reporting year and 17 'reportable' incidents - an increase of one on 2021. These are incidents reportable under the relevant health and safety legislation for each country. Therefore, the criteria for inclusion vary, depending on the location of the business unit. There were no prosecutions for health and safety failings and no enforcement activity, for example, enforcement notices from HSE/HSA.

We have introduced targets for our Reportable Injury Rate (RIR) both at Group and Business Unit level. In our first year of targeting these measures, the target was based on achieving a reduction in the rate against FY21. However, improved reporting and awareness across the Group, led to an increase in all incidents reported and we narrowly missed our target. With more standardised and robust reporting across the Group our focus, going forward, will be to drive our RIR down by implementing focused risk reduction strategies.

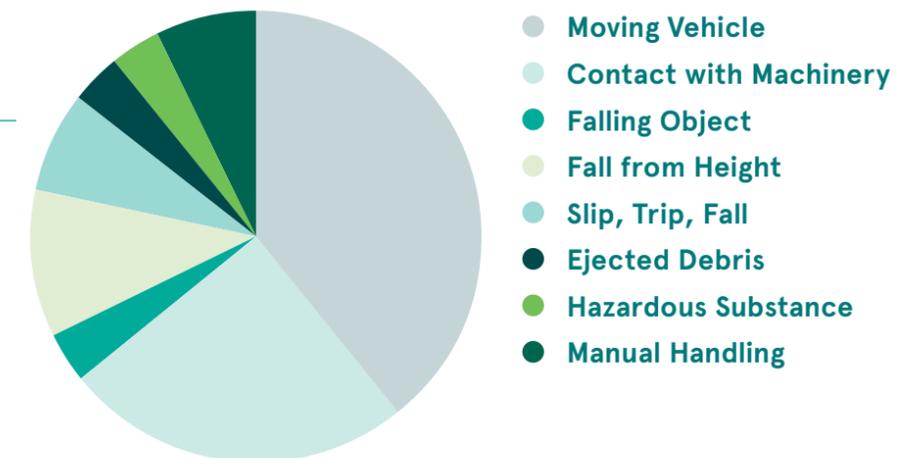
Our current risk reduction strategies focus on our key risk areas identified through analysis of our work activities and incident data. In 2021, we also introduced a reporting criterion to record high potential incidents to ensure a suitable response to incidents that might not necessarily cause significant injury, but have the potential to do so.

In FY22 we recorded 14 high potential incidents across the Group. Each was fully investigated, and appropriate remedial action was identified to prevent similar incidents in the future. The chart to the right identifies the immediate causes of reportable and high potential incidents during FY22. The top two risks were moving vehicles and contact with machinery. Appropriate risk control and mitigation strategies will be identified in each business unit.

Measure	FY2021	FY 2022	Target 2030	Commentary
Fatality Rate*	0	0	0	No work-related fatalities.
Reportable Incident Rate (RIR)*	6.12	6.41	<6	> 11 (RIR 6.96) reportable incidents from the UK and Ireland > 2 (RIR 2.1) from Continental Europe > 4 (RIR 21.6) from Latin America.
Lost Time Injury Rate (LTI)*	11.10	13.80	-	In 2022, an average of 11 calendar days were lost per LTI across the Group. Total calendar days lost was 409. > UK and Ireland x 24 LTIs and 245 calendar days lost > Continental Europe x 3 LTIs and 148 days lost > Latin America x 10 LTIs and 16 calendar days lost.
Near Miss Rate* (UK & NI)	41.64	46.78	-	This indicator is used to track the prevalence of early identification of hazards. It enables the pro-active resolution of hazards and engages the workforce in solving issues. During 2022, Origin is now tracking this measure across the Group, with improved reporting.

*All incidence rates are calculated as total number of incidents per 1,000 employees.

Reportable and High Potential Incidents by Immediate Cause



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY:

How We do Business responsibly

Introduction

Empowering our people

> **Implementing our Health, Safety and Well-being Roadmap**

Sustainable land use

Local community engagement

03 How We Organise For Impact

Key Achievements 2022

Held Safety Leadership Workshops with Board members and Senior Leaders from each Business Unit. These were on-line interactive sessions on how to achieve excellence in safety focussed on our culture. ✓

Redeveloped our Group HSW Policy and launched new Group HSW Standards. These were implemented across all businesses in the Group. Information was included outlining our stated goals: to ensure that we do not put ourselves, colleagues, contractors, customers or the wider public at risk, and to ensure our work activities have a positive influence on physical and mental health. Our Standards set specific objectives across nine different areas and we will be auditing against these agreed standards going forward. ✓

Introduced a Group-wide H&S platform - EcoOnline
In September 2021, we launched a Group-wide H&S software platform. This system was initially designed as an integrated, internal reporting platform for incidents and safety observations, as well as electronic audits and inspections. In 2023, the system will also include Contractor Management and Training Management. ✓

The data insights realised through the platform and the improved access to reporting made significant differences to our safety culture through the year, even in the first year of the software deployment.

Introduced a Group HSW Forum. This Forum is used for sharing best practice and lessons learnt, celebrating success, and developing competence amongst the H&S teams. The Forum meets quarterly and consists of H&S, HR, and Operational representatives from all Business Units. ✓

Continued to invest in HSW across the Group. For example, we have invested in the EHS software platform, and we have also created a new Group Head of H&S role to lead on our strategic direction. ✓

Improved reporting of incidents, near misses; as well as proactive reporting of hazards. The launch of the EHS software platform has improved accessibility of reporting across all businesses. The result of this is evidenced by an improved Near Miss reporting rate for the UK and Ireland businesses (46.78 for FY22 compared to 41.64 for FY21), and for the first time we are able to track reporting of safety observations, with a total of 195 being reported since September. As the software roll-out continues and the reporting culture embeds further we are expecting to see a greater emphasis on reporting of Near Miss incidents and Safety Observations, allowing us to focus proactively on our risk mitigation. ✓

Developed performance indicators at Group and Business Unit level. We have introduced targets and indicators to ensure we are able to measure and review progress against our goals. With much improved reporting enabled by the EHS software platform, we are now able to have consistent data analytics to ensure we are measuring accurately and measuring the right indicators. We will continue to develop further measures, focusing on introducing leading indicators, over the coming year. ✓



Next Steps / Priorities

- > Introduce a safety leadership programme for senior managers, building on the success of the Safety Leadership Workshops.
- > Implement a Group-wide HSW auditing programme that identifies the strengths and weaknesses of the safety management systems in place across the Business Units. This will feed into the development of a more detailed HSW Strategy to build on the success of our Roadmap.
- > Continue to build on our KPI development to introduce leading measures that will identify and track our improving HSW culture and strategic approach.

STORIES OF IMPACT

SAFETY LEADERSHIP WORKSHOPS

Our workshop started with the provocative statement that the ‘absence of accidents does not necessarily equate to the existence of safety’. This questions many of our natural behaviours as managers where measuring something is seen as key to managing it and getting a better KPI score reflects a better outcome. The workshop looked at how greater progress can be achieved by making safety a part of our culture and therefore focussing on weaving safety into the day-to-day fabric of what we do, rather than relying on systems, processes, and procedures.

There were two messages, summarised as: Safety and safe behaviour is ‘what we do all the time’ and safety improvement is a daily activity for everyone, including the Board. We really appreciated the fact that all Board members attended and participated.

For our business, what was a positive outcome is the decision to add forward-looking metrics to Agrii UK’s KPIs so that we look forward through the windscreen not just through the rear-view mirror. It is a significant change and like anything cultural it will take time.



Peter Vinestock
Head of Operations, Agrii UK

A final takeaway for me was the simple question “What is your why for safety?”

Think about that and then identify the small, simple things that YOU can do today to improve safety.

Head of Operations, Agrii UK

EcoOnline

EcoOnline has made the process of updating records, with completed actions easier and more manageable. The system is user friendly and has the capability of helping in other areas, like tracking maintenance or repairs on plant or machinery.

Origin Fertilisers – Site Manager

Since the implementation of EcoOnline the benefits of the system have been very well received at Alconbury. Previously, the process of capturing and recording Hazards, Near Misses and Accidents on site was a little disconnected and relied on staff completing different forms, depending on the nature of the report. These forms were then moved from one desk to another in the hope that it ended up with the right person to investigate the report correctly. As a result, the Health and Safety team might not always be aware of the report and the outcome could be a little inconsistent. Any learnings from the investigation were generally not shared with the business and kept within the local department or teams, so minimising the opportunity to help reduce problems elsewhere.

With EcoOnline, the reporting is made much easier and consistent. Staff can easily report positive as well as negative observations via QR codes or the App with easy step-by-step online forms and also be confident that their line manager will be made aware of the report and investigate it. As the Health and Safety team are included from the start of the report they have been able to monitor and help with investigations and solutions. This wider approach then helps ensure any learnings are shared with the rest of the business. The reporting dashboard is also a big help to managing all the reports and gives a good indication where we are doing well and where we could improve with the added bonus of minimising the admin required from the old, paper-based process. EcoOnline has been a massive step forward and with further enhancements planned, it will no doubt continue to help us manage our site health and safety more effectively.

Agrii UK – Depot Manager

01 Our Sustainability Approach

02 Our Strategy – Nurturing Growth

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY:

How We do Business responsibly

Introduction

Empowering our people

> **Implementing our Health, Safety and Well-being Roadmap**

Sustainable land use

Local community engagement

03 How We Organise For Impact

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY:

How We do Business responsibly

Introduction

Empowering our people

> **Implementing our Health, Safety and Well-being Roadmap**

Sustainable land use

Local community engagement

03 How We Organise For Impact

Covid-19

During 2022 we continued to focus on supporting employees and contractors, in the context of COVID-19. The Group implements the advice and guidance of governments and health authorities across our markets, with ongoing audits at all our operating facilities to ensure we focus on the importance of space, ventilation and hygiene, and all other health and safety guidance. The second half of 2022 showed a reduction in infection numbers, which resulted in countries significantly reducing restrictions. Group HR continues to monitor the situation especially for key sites, as hybrid working and return-to-work protocols are implemented for all countries. We remain vigilant to the risks of further infections and will re-introduce any measures as / when required.

Ukraine

The ongoing war and humanitarian crisis in Ukraine has significantly impacted on Origin's employees and business operations in the country. The Group's priority is the health and safety of colleagues. Since March 2022, we have adopted a multi-disciplinary approach which allowed us deliver critical operations in the face of disruption – and most importantly, to protect our people. Our business continuity allowed us to respond swiftly to the safety risks, as we undertook practical measures to assist employees and their families (including financial assistance and the provision of relocation support within and outside Ukraine).

Our teams in Agrii Polska and Agrii Romania welcomed 15 of their colleagues and over 80 wider family members of colleagues into Poland or Romania and provided them with shelter and support from both a wellbeing and a financial perspective. In the UK we introduced a scheme to facilitate potential hosts for UK nationals, and opened this scheme not just to Origin employees, but to friends and families of any UK colleagues willing to host. Similarly, we are matching not only with Agrii Ukraine employees and their families, but anyone in need who is put forward through our network of contacts in Ukraine. We are pleased to say we have matched eight Ukrainian families with hosts in UK and this scheme is continuing.



The Group implements the advice and guidance of governments and health authorities across our markets.



Target:

Target 30% female representation in leadership and management positions by 2030



Diversity Equality and Inclusion

We foster an inclusive culture that attracts diverse talent and creates a workforce that mirrors society and understands its diverse needs.

We support diversity, inclusion and equal opportunity and our ambition is for our people, customers, suppliers, partners and communities to feel included and treated fairly.

Origin is committed to providing all employees with a respectful and inclusive workplace. Diversity, inclusion, and equality are championed at the highest level in the organisation by the Chief Executive and the Board. In 2019 we initiated the 'You Make Our Difference' initiative, setting out a commitment to increase the representation of under-represented groups in the organisation. Today, we are placing particular emphasis on increasing our gender diversity and ensuring we provide the leadership and infrastructure to support diversity access and inclusiveness throughout the Group.

Here is what we have achieved so far:

- > Target of 30% female representation in leadership and management positions by 2030:
 - Solid progress made with 24% female representation in 2022, an increase of 6% on 2018 (18%)
- > 38% female Board membership (38% in 2021)

We are working hard to foster a culture which embraces diversity, inclusiveness, and equal opportunities.

- > Embedding our 'Code of Conduct' programme and rolling it out across the Group - including our commitment to Equality, Diversity, and Inclusion and our 'You Make our Difference' Policy
- > Group wide training completed in 2022:
 - Equal Opportunities training for all employees
 - Unconscious Bias training for leaders and managers
 - Unconscious Bias training integrated into all new starters on-boarding programmes
- > Implemented Inclusive Leadership Training Executive / Senior Leadership
- > Implemented our Group-wide Equality, Diversity, Inclusion, Wellbeing and Community calendar for 2022, covering monthly activities
- > Implemented Origin Group Level Hybrid Working Principles. These principles will provide a framework for local hybrid working arrangements in each Business Unit
- > We continue to increase the visibility of our female role models. In support of International Women's Day 2022 we again took the opportunity to support the 'Break the Bias' activities across the Group.

Diversity and Inclusion - Gender Balance

Year	Female Representation of Origin Employee	Movement	Female Representation at leadership and Management Level	Movement
2018	26%		18%	
2019	27%	↑	21%	↑
2020	28%	↑	22%	↑
Jul-21	27%	↓	23%	↑
Mar-22	27%	no change	24%	↑
Jul-22	27%	no change	24%	no change



We are working hard to foster a culture which embraces diversity, inclusiveness, and equal opportunities.

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY:

How We do Business responsibly

Introduction

Empowering our people

> **Implementing our Health, Safety and Well-being Roadmap**

Sustainable land use

Local community engagement

03 How We Organise For Impact

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY:

How We do Business responsibly

Introduction

Empowering our people

> **Implementing our Health, Safety and Well-being Roadmap**

Sustainable land use

Local community engagement

03 How We Organise For Impact

Group Employee Survey

- > Across the Group we have seen the Diversity and Inclusion category trend positively since 2019, particularly when it comes to supporting diversity in the workplace
- > In 2022, we expanded our annual employee index questions under the 'Diversity and Inclusion' category (from two to seven questions).



Diversity and Inclusion continued to emerge as a key theme, particularly in relation to supporting diversity in the workplace.



Validated measure of inclusion

Our survey contains a validated measure of inclusion

Accepting and respecting all

- > The work environment in this Company is **accepting of everyone**.
- > People at this Company **treat each other with dignity and respect** regardless of who they are.
- > This Company **supports diversity** in the workplace.



Ensuring full contribution to success

- > In our team, we **give each other a fair chance** to demonstrate our talent and capabilities.
- > This Company provides a working environment **free of discrimination and harassment**.

Providing equal access to what is valued

- > This Company **supports equal opportunities** for all employees.
- > Everyone has the **same opportunity to advance** in this Company regardless of who they are.



In early 2022 Agrii Romania launched their 'Woman2Woman' development programme

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY:

How We do Business responsibly

Introduction

Empowering our people

> **Implementing our Health, Safety and Well-being Roadmap**

Sustainable land use

Local community engagement

03 How We Organise For Impact

Hybrid Working Principles

We want to support our colleagues to keep delivering their best, to maintain a healthy work life balance and, where appropriate, to work in a hybrid way whilst staying connected.

Our commitment to balance means that we are striving to ensure a more flexible working approach, to meet work and personal commitments.

In 2022, we reviewed the learnings from the pandemic and implemented our hybrid working principles across the Group to support more flexibility in our working arrangements. Our Hybrid Working Principles set out our approach and commitment to hybrid working across Origin. The Principles apply to all businesses within Origin and underpin our autonomous business model, by providing a framework in which hybrid working arrangements are developed and managed at Business unit level.

Our goal is to provide greater flexibility across the Group, where practicable and operationally possible.

Where possible we will strive to:

- > **Maintain an appropriate balance** and support more flexibility in our working arrangements (hybrid working and other forms of flexible working)
- > **Establish local principles** (including eligibility and expectations) for effective hybrid working at a Business Unit level
- > **Lead by example** – ensure that our leaders set the tone by encouraging hybrid working and committing to role-modelling hybrid working themselves
- > **Ensure new working practices are inclusive** and fair and encourage working in a healthy way

- > **Support managers** through training and guidance to help them develop the skills needed to deliver effective communication, performance management, collaboration and relationship building in teams that are working both remotely and in the office
- > **Provide colleagues with the support** (for example, technological, manager access) they need to work well remotely
- > **Ensure hybrid working arrangements** support employee wellbeing
- > **Encourage and facilitate the sharing of best practice** and lessons learnt in respect of hybrid working both within their business and across the wider Group.



At Origin, we believe that hybrid working is all about balance.



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY:

How We do Business responsibly

Introduction

Empowering our people

> **Implementing our Health, Safety and Well-being Roadmap**

Sustainable land use

Local community engagement

03 How We Organise For Impact



One of our core values is community. We aim to contribute to the success of the communities where we operate, combining our global capability and local expertise. This is demonstrated through a number of activities that we undertake to support our communities at a local level, as well as through investment in the latest innovation and best practice in support of sustainable land use.



Alasdair Innes – Green-tech Morning run up Catbells in the Lake District as part of 'Miles in May' initiative for mental health month

Tackling Food Insecurity

Origin recognises the necessity to adopt new technologies and innovative tools, and practices, in order to meet the growing global demand for food in the coming decades. Our approach focuses on closing yield gaps and creating efficiencies within agricultural production systems that support the goal to eradicate hunger and food insecurity.

Among the key macro-growth drivers for our business model are Sustainable Agronomy – and Global Food Supply Responsiveness.

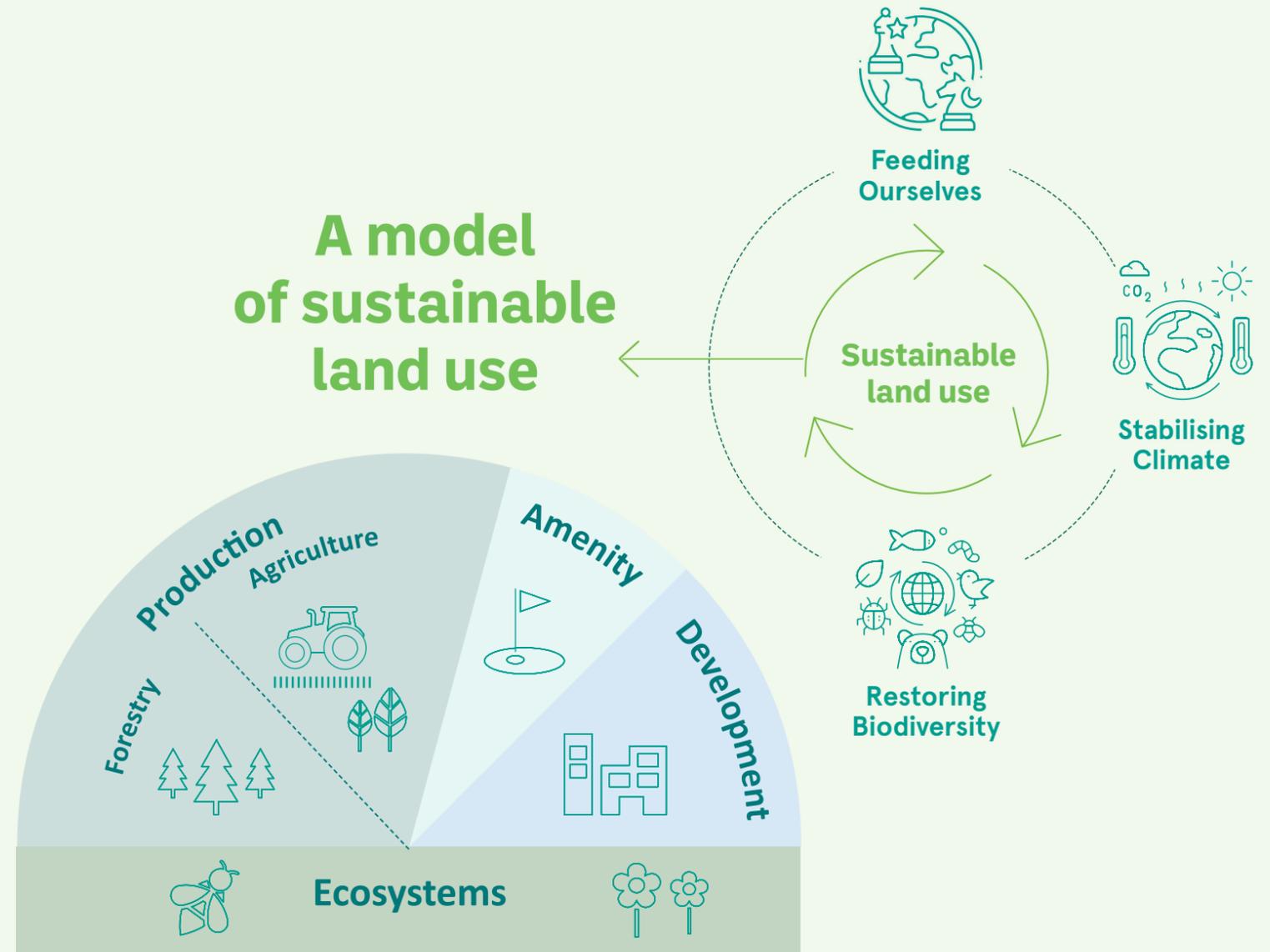
In the context of the war in the Ukraine, 2022 saw an increased focus on food security across the sector. During the year, Origin achieved further integration of new products and solutions across our markets with BioSolutions and specialty nutrition product technologies focussed on yield optimisation.

Farmers, growers and amenity professionals are critical partners in our focus on sustainable land use. During 2022 the Group worked with over 48,000 farmers and amenity professions, to engage and train our customers in best practice to achieve both environmental impact reductions and sustainable yield increases. Farm visits with Agronomists are central to this programme of engagement.



- 01 Our Sustainability Approach
- 02 Our Strategy - Nurturing Growth
 - NURTURING OUR ENVIRONMENT**
 - NURTURING OUR SOCIETY: How We do Business responsibly**
 - Introduction
 - Empowering our people
 - Implementing our Health, Safety and Well-being Roadmap
 - > **Sustainable land use**
 - Local community engagement
- 03 How We Organise For Impact

Sustainable land use is core to addressing our global crises.



Local community engagement

Throughout the Group, Origin representatives participate in community-based groups such as industry associations, Chambers of Commerce, Community Advisory Panels, charitable and non-profit organisations, and other community organisations.

During 2022, local business units continued to partner and support organisations fulfilling social purposes. Some examples during the year were:

- > Green-tech maintenance of public open spaces, tree planting in woodlands, creating urban landscapes and planting biodiverse wildflower meadows
- > Agrii Romania partnership with World Vision on a school's sponsorship
- > Group-wide support for rural mental health charities.



STORIES OF IMPACT

CSR – EDUCATION

Scholarships for children

In Romania 56% of rural students drop out of school due to their financial situation. Although education is free, the costs of supporting them in high school are very difficult for parents to cover.

Together with World Vision we offered ten scholarships for children with low income from rural areas such Dolj, Botosani and Iasi. Between November 2021 and August 2022 these ten children received a monthly scholarship worth 400 Lei which helped them with costs such as food, school supplies or transportation from home (rural area) to school (city area).

All the children are in high schools where an understanding of, and passion for, agriculture are embedded. The trip that we organised to our office in Bucharest was a great opportunity for them to broaden their horizons, visit a new area and discuss with our Agrii team, their potential and the importance of education.

- 01 Our Sustainability Approach
- 02 Our Strategy – Nurturing Growth
 - NURTURING OUR ENVIRONMENT
 - NURTURING OUR SOCIETY: How We do Business responsibly
 - Introduction
 - Empowering our people
 - Implementing our Health, Safety and Well-being Roadmap
 - Sustainable land use
 - > Local community engagement
- 03 How We Organise For Impact

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

NURTURING OUR ENVIRONMENT

NURTURING OUR SOCIETY:

How We do Business responsibly

Introduction

Empowering our people

Implementing our Health, Safety
and Well-being Roadmap

Sustainable land use

> **Local community engagement**

03 How We Organise For Impact



Fortgreen
Community
Garden



03 HOW WE ORGANISE FOR IMPACT



Environmental, Social and Governance (ESG) Framework

- 01 Our Sustainability Approach
- 02 Our Strategy - Nurturing Growth
- 03 How We Organise For Impact
 - > ESG Governance Framework
 - Reporting and Transparency

Through robust governance and transparency in our reporting, Origin is committed to integrating sustainability into our way of operating and all decision making. Good governance is the foundation for delivering on the Origin sustainability strategy, supporting goal-setting and reporting processes, strengthening relations with external stakeholders and ensuring overall accountability.

The Board has overall responsibility for the management of financial and non-financial risks and opportunities, including climate change. To embed a culture of environmental, social and governance best practice and enable the delivery of 'Nurturing Growth', the Origin Board established a new Environmental, Social and Governance (ESG) Committee in 2021. The role of the Committee is to represent the Board in supporting, evaluating and overseeing the long-term evolution of ESG-related policies, practices, targets and initiatives.

Business integration is achieved through a cross-functional Sustainability Steering Committee, comprising senior management across various departments and business units (page 10). Since 2019, Origin's risk management process has incorporated material sustainability issues. To read about the Origin risk management process please see our Risk Report on page 46 of the [2022 Annual Report](#).

Sustainability Steering Committee comprising senior management across various departments.

Conducting business with integrity



Being an employee of the Origin Group means striving towards the highest possible standards of behaviour and ethical business conduct.

Origin Code of Conduct

Our Code of Conduct, and the Group policies supporting it, define business conduct standards for everyone who works for Origin, in all of our businesses, in every function, geography and role.

Our five core values which make up 'The Origin Way' define who we are as an organisation. They are the guiding principles for how we should interact, every day. 'Integrity' is one of our values and is consistent with ethical standards being at the heart of the Group. It represents our commitment to our values, to doing the right thing, personally and professionally, and the standards by which Origin leaders and employees should operate on a range of important and relevant issues. It also provides guidelines for our conduct.

Our core values



01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

03 How We Organise For Impact

> ESG Governance Framework
Reporting and Transparency

We hold ourselves to the internationally recognised environmental, social and governance standards which are based on the ten principles of the UN Universal Declaration of Human Rights and strive to uphold the principles set out in the UN Global Compact initiative and the ILO Declaration on Fundamental Principles and Rights at Work. Our Code is informed by these principles.

The Code of Conduct outlines our stance on a range of topics, including:

Anti-Bribery and Corruption

We operate a zero-tolerance approach to bribery, money laundering, fraud and corruption, in any form.

People

We are committed to promoting equal opportunities, attracting and retaining diverse talent and sustaining an inclusive working environment for all our colleagues throughout their career with us.

Human Rights and Labour

Origin is committed at all times to upholding international human rights. This commitment is embedded in the cultural values that define our organisation and is reflected in our policies and actions towards our employees, suppliers, clients, communities and the countries in which we operate.

Wage and Hour Practices

We are committed to paying employees fairly for the work they perform, regardless of personal beliefs or any individual characteristics. We abide by all international and national laws regarding pay and hours practices.

Discrimination and Harassment

We will not tolerate any form of discrimination, bullying or harassment or those who engage in it, facilitate it or allow it to happen.

Freedom of Association

While we believe that direct dialogue with employees is an effective way to develop an engaged workforce, we recognise and respect the rights of employees to associate freely and bargain collectively and are committed to fostering open and inclusive workplaces that are based on

recognised workplace human rights. Employees' representatives are not discriminated against and have the ability to carry out their representative duties in the workplace.

Employee Data Protection

Origin respects the privacy of its employees by protecting sensitive and private information and complying with relevant data protection legislation. We are committed to collecting and processing personal data in a transparent and lawful manner, which is specific and relevant for the purposes for which it was collected.

Community Relations

We are committed to making a positive contribution in the societies and communities in which we operate. We encourage active participation by our companies and employees in initiatives that support local communities, through social, educational and charitable activities.

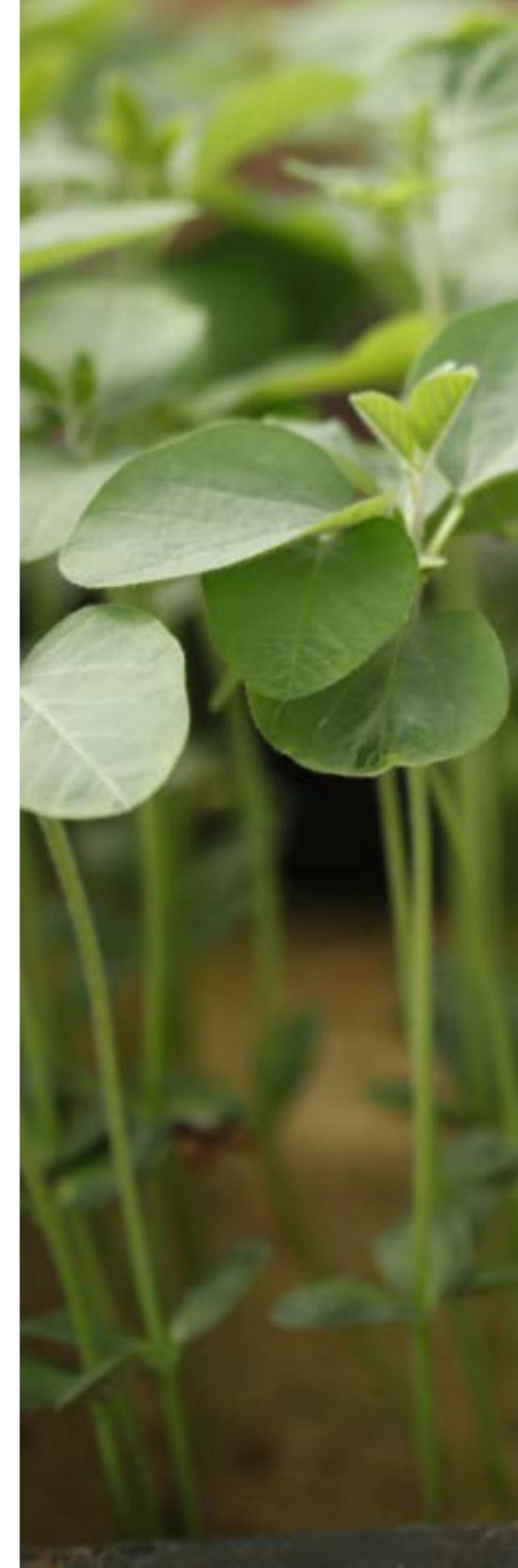
Supplier Code of Conduct

Our business relationships and engagements with suppliers play a key role in contributing to the success of this commitment and we enlist our suppliers to support, embrace and adhere to the standards set out in this Code. In return, we strive to be the trusted partner of choice across our value chain, believing that relationships built on trust, integrity and shared values will be sustainable and beneficial for all.

Our Code sets out the minimum standards we hold our suppliers to across the areas of people and labour, business ethics and compliance, and health, safety and environment.

We expect suppliers to have the appropriate processes, policies and systems - commensurate with the size and nature of their business - to comply with the standards and to have mechanisms in place to determine and control risks in all areas addressed by this Code.

We are committed to continuous improvement in our supply chain and similarly encourage our suppliers to adhere to the highest industry and international standards and promote best practices throughout their operations. Suppliers are encouraged to promote open and transparent communications in their organisations and offer employees appropriate avenues for raising concerns about wrongdoing without fear of retaliation. Our independent whistleblowing hotline is also open to suppliers for the confidential reporting of concerns about misconduct, unethical or illegal behaviour and is available 24 hours a day, 7 days a week.



Reporting and Transparency

- 01 Our Sustainability Approach
- 02 Our Strategy - Nurturing Growth
- 03 How We Organise For Impact
 - ESG Governance Framework
 - > Reporting and Transparency

Origin commenced formal sustainability reporting in 2019 (looking at our impacts at an aggregate level) and published our inaugural Sustainability Report 'Nurturing Growth' in 2021. The Origin sustainability report is published annually to coincide with the publication of the Annual Report and is subsequently available on the Group website www.originenterprises.com

The Global Reporting Initiative ('GRI') guidelines have determined our focus on key material aspects, boundaries and measures. We have also mapped our plans against the United Nations SDGs. See Key Performance Indicators, [page 19](#)

We have adopted an integrated approach as per the UN Global Compact with Business Units and Group function representation on the Sustainability Steering Committee and sustainability on the agenda of all business segments.

EU Non-Financial Disclosure Directive

Origin complies with the European Union (Disclosure of Non-Financial and Diversity information by certain large undertakings and groups) Regulations 2017. The table below is designed to help stakeholders navigate to the relevant sections in the 2022 Annual Report to understand the Group's approach to these non-financial risks. Many of our policies can be viewed on www.originenterprises.com.



Origin commenced formal sustainability reporting in 2019 (looking at our impacts at an aggregate level) and published our inaugural Sustainability Report 'Nurturing Growth' in 2021.

EU Non-Financial Disclosure Directive

Reporting requirement	Policies and standards which govern our approach	Additional information
Environmental matters	Nurturing our Environment	→ Please see our Code of Conduct
Employee matters	Code of Conduct Diversity and Inclusion (D&I) Values and Engagement Whistleblowing Policy	→ Please see our Code of Conduct
Social matters	Community Relations	→ Please see our Code of Conduct
Human rights	Human Rights Anti-Slavery and Human Trafficking Statement	→ Please see our Code of Conduct
Anti-bribery and corruption	Anti-Bribery and Corruption	→ Please see our Code of Conduct
Description of principal risks and impact on business activities		Drivers of Sustainability Risk report - Annual Report 2022
Description of business model		Business Model - Annual Report 2022
Non-Financial KPIs		Key Performance indicators - Annual Report 2022

The Taskforce on Climate-related Financial Disclosures

The Task Force on Climate-related Financial Disclosures ('TCFD') established recommendations for voluntary climate-related financial disclosures, to help financial markets better understand the material climate-related risks and opportunities to which companies are exposed and to enable efficient allocation of capital in the transition to a low-carbon economy. Origin supports the TCFD's recommendations and has been working to implement them since 2020.

In 2022, we commenced a climate risk and opportunity analysis based on the framework of the TCFD. This is a holistic approach with the aim of broadening our understanding of the climate-related risks and opportunities facing Origin and addressing stakeholders' expectations regarding climate risk mitigation and adaptation.

We have mapped climate risks and opportunities across our value chain and global activities and assessed the climate scenarios to ascertain their future materiality for us. [See page 43](#)

ESG Ratings and Rankings

Origin is committed to transparent sustainability reporting and as such participates in external, independent ESG ratings. The requirements of ESG questionnaires promote internal awareness and further help to embed sustainability management throughout the Group.

Origin's governance, ESG initiatives and performance are evaluated each year by a number of independent sustainability rating schemes.



In 2022, we commenced a climate risk and opportunity analysis based on the framework of the TCFD.

During 2022 Origin has maintained and improved its ratings as follows:

SCORE		RATINGS SCALE						
	14.7 March 2022							
		NEGL Risk	LOW Risk	MED Risk	HIGH Risk	SEVERE Risk		
		0-10	10-20	20-30	30-40	40+		
	BBB June 2021							
		AAA	AA	A	BBB	BB	B	CCC
	C December 2021							
		A	A-	B	B-	C	C-	D

01 Our Sustainability Approach

02 Our Strategy - Nurturing Growth

03 How We Organise For Impact

ESG Governance Framework

> Reporting and Transparency



Origin Enterprises plc is an international Agronomy-Services group, providing specialist advice, inputs, services and digital solutions to promote sustainable land use. The Group has leading market positions in Ireland, the United Kingdom, Brazil, Poland, Romania and Ukraine. Origin is listed on the Euronext Growth (Dublin) and AIM markets of the Irish and London Stock Exchanges.

Euronext Growth (Dublin) ticker symbol: OIZ

AIM ticker symbol: OGN

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