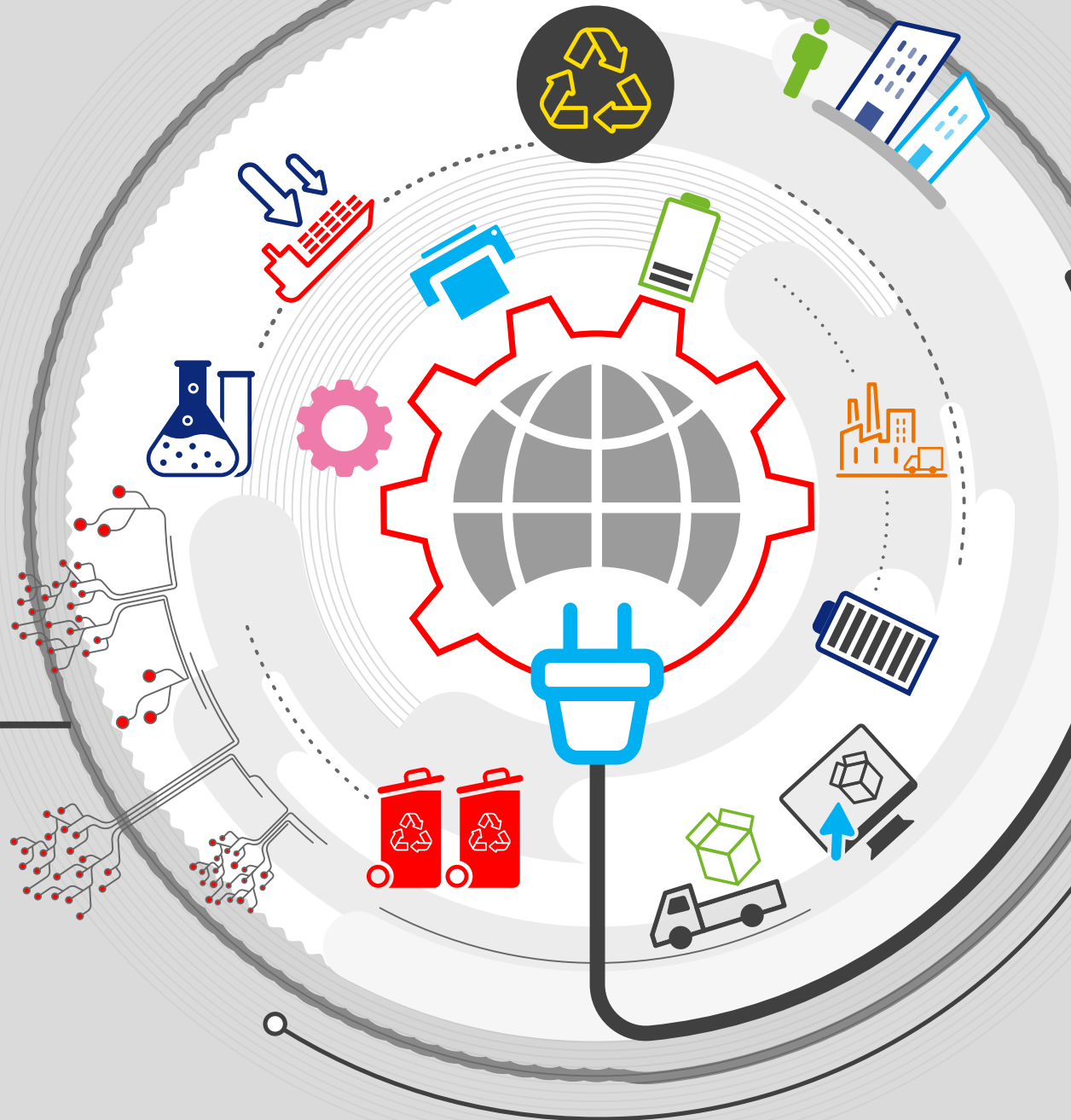


**ANNUAL PERFORMANCE
REVIEW 2022**



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A year in review by Jan Patrick Schulz

CEO of Landbell Group

Welcome to Landbell Group's annual performance review for 2022.

This report covers more ground than previous editions because demand for recycling and extended producer responsibility (EPR) surged again last year.

Worldwide, we are facing economic factors like deglobalisation, more protectionist policies, decarbonisation, and an aging population with more focus on sustainability. This leads to the following trends for our industry:

Most industrialised nations will have to invest heavily to stop waste and pollution, often by making the producer responsible. Decarbonisation will require electrification on an enormous scale (mostly through clean energy) and vast amounts of raw materials.

Recycling will therefore be crucial to produce enough secondary raw materials, help countries become more independent from raw material imports, and fulfil increasingly broad and complex regulations – ranging from EPR to environmental, social and governance (ESG).

To increase recycling, new technologies will be essential. They will also help producers to fulfil these additional obligations and grasp the opportunities of the circular economy.

Leaf through the pages of this report and you will see how Landbell Group took more steps than ever to respond to these recycling and regulatory challenges in 2022.

A year in review by Jan Patrick Schulz.

Let me guide you through the three parts of this report.

Part 1

explains how we continued to build a global platform for EPR – one that enables our customers to join the circular economy and contribute to a world without pollution or waste. Our unique global supply chain underpins this platform. So does our software suite, Circul8: new technology that we continued to roll out to manage more circular economy operations and EPR obligations. This global platform also allows us to be a partner for the future, supporting our customers in new geographies and with more waste streams.

Part 2

describes the corporate structure that we introduced last year to expand our global operations and focus our energies where our customers need us most:

In Germany, Austria and Switzerland, we introduced new ways to help customers – by providing secondary raw materials to producers, making access to compliance easier, particularly for online sellers, helping with increased regulatory pressures or developing innovative takeback solutions.

We also enhanced our services and scope to support customers with the active regulatory change in the rest of Europe and North America.

Part 3

highlights our ongoing commitment to forward thinking. The legislative landscape focused even more on the circular economy in 2022 with the Packaging Directive, for example, seeking to make packaging more recyclable. That's why we stepped up our research and development (R&D) activities for better recycling, engaging in the design of sustainable packaging, and exploring advanced recycling technologies for packaging waste. We also supported R&D to develop the global waste infrastructure, supporting EPR projects from the Balkans to Nigeria.

The final chapter of this report is all about sustainability. In 2022, we took an important step towards embedding sustainability into our business operations and decision-making – and towards helping our customers meet their sustainability reporting and ESG mandates.

Last year showed us, yet again, that it's time to change. The economic and environmental necessities are merging, and regulations, resources and recycling are driving this shift.



6,800,000+
tonnes of packaging
treated since 2004



4,000,000+
tonnes of WEEE
treated since 2004



110,000+
tonnes of batteries
treated since 2010



25 offices



20 locations



**450+ employees
from 30+ nationalities**



Customers ●
Employees ●
Locations ●

Finance.

This success is due to several factors.

A time of expansion

We served more customers in 2022 and helped them to meet new challenges, such as more waste streams coming into scope, in more parts of the world.

Our recently established overseas businesses, such as Brazil and India, also developed their operations successfully.

We diversified our service offering with a more digital approach towards smaller customers and increased the number of online customers that we support significantly.

We also grew our consulting business in line with our strategic positioning. Last year, we hired more than 90 new people to support the business in key areas such as consulting, software, research and development, as well as operations.

The growth was also driven by material revenues – a reminder of the increasing importance of resources that Landbell Group’s CEO, Jan Patrick Schulz describes in the first chapter of this report.

Our approach

How are we able to maintain this strong growth, global outlook and clear focus on our customers’ needs?

Landbell Group is internally financed, has a solid equity and a long-term, sustainable business model. Our principal shareholder has been with the company since it was founded, and our CEO has led the company since 2007.



This stable management and ownership structure provide the foundation for us to be a reliable, yet dynamic partner for our customers.

Going global

We are also harnessing our strengths – based on unrivalled knowledge and a unique global supply chain – to deploy EPR effectively around the world.

Last year, we shared our expertise and experience with global partners such as the United Nations, World Bank, and other international organisations. We also provided active support and co-financing to develop EPR regulations and systems, notably in Africa and the Middle East.

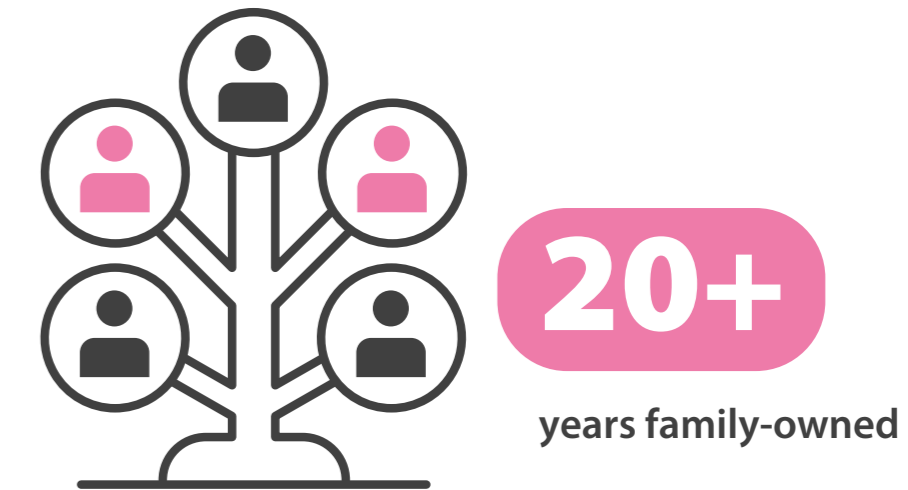
Furthermore, we are strongly engaged in multiple internal and external R&D activities in new recycling technologies, to build closed loop solutions, and enhance the recyclability of products and materials.

Looking ahead, this investment in strengthening our know-how and capabilities puts us in an excellent position to deliver better services for our customers - all over the world.



Following significant growth in sales in the last three years, company revenue continues to rise – and we expect it to increase further in 2023.

Tim Scholz
CFO, Landbell Group



Customers.



Our customers are doing business in a rapidly changing and demanding world. Our goal is to support them as much as possible in this environment: wherever they need us and with every new challenge."

Martin Tobin
CCO, Landbell Group



In 2022, we continued to offer a diversified range of services for extended producer responsibility (EPR) and the circular economy. More than ever, we offered support along the entire product life cycle.

Circular approach

Our circular economy engineering and R&D teams did ground-breaking work to prioritise the use of renewable and post-consumer materials.

Our global consulting teams were on hand to support customers with ingredient sourcing, product manufacture, product supply chain and transport, and customer and consumer use.

These stewardship services help customers to manufacture safe and sustainable products.

Our consultants also worked with our global supply chain and producer responsibility organisations to take care of customers' products at end-of-life and support circular design.

In so doing, we took valuable steps towards turning more waste into resources and keeping our customers' resources in the supply chain.

Broad customer base

Last year, we served a wide range of customers, supporting global brands, SMEs, and startups alike. We helped these customers achieve their legal obligations and environmental goals in many ways:

We supported international customers who want to manage their EPR activities centrally.

We increasingly provided support to customers who want to demonstrate their environmental and sustainability credentials. Our sustainability initiative, which we launched last year (see page 36), will ensure that we can do more to help these customers going forwards.

Thanks to our strong local presence, we can also support customers in very specific territories or grow with them as they expand their operations and product scope.

As a minimum, we offer every customer convenience, efficiency, and peace of mind.

New territories and streams

Last year, we also supported customers in new territories. From its long-standing presence in Europe and the Middle East, Landbell Group is now growing its operations in the Americas and Asia.

As more and more countries establish EPR, our global consulting projects help us to take first steps into new territories. Our reliable network of suppliers (see page 10) then allows us to launch operations there. Brazil and India are two examples of where we expanded our reach in 2022 (see page 24).

The French Anti-Waste for a Circular Economy Law, which was published last year, has already brought new waste streams into scope. More products, such as textiles and fishing gear, will soon come under the scope of EPR regulations.

We will assess these challenges and opportunities and support all our customers with new legislation and in new territories. If the future is uncertain, we will be the partner who they can rely on.



Supply chain.

Global platform for EPR

This network underpins our platform for extended producer responsibility (EPR) and takeback programs worldwide.

It is one of the reasons why our producer responsibility organisations (PROs) meet their targets every year and we can provide recycling services internationally.

In 2022, on behalf of our customers, we treated more than 190,000 tonnes of WEEE, more than 16,000 tonnes of waste batteries and 640,000 tonnes of packaging.

Our supply chain operates cooperatively with collection points, transport carriers and treatment centres around the globe, thereby managing the entirety of the recycling process meticulously.

In 2022, our operations surpassed more than 289,000 pick-ups across all Landbell Group entities in more than 14 countries.

Our supplier benchmarking, market intelligence and tender processes give us the flexibility that we need to adapt our operations to customer needs, as well as the assurance that all waste is handled efficiently and to the highest environmental standards.

Moreover, our global supply chain expertise was used to support our consultancy services – for example, providing solutions for problematic e-waste fractions in African and South American countries (see also page 30).

We also contributed to a spare parts project: to evaluate the current and future market for spare parts harvesting and refurbishing in the electronics sector.

Raising the bar

How do we meet the highest possible quality and audit standards that our customers demand?

In 2022 alone, Landbell Group carried out more than 60 own audits in 21 different countries, raising and following up 380+ corrective actions in the process.

For many years, Landbell Group has developed and maintained its own e-waste and waste batteries treatment standards and our S3 audit program and standard is used to demonstrate compliance with EPEAT's end-of-life management criteria (see also page 23).

Landbell Group can focus on international solutions because its unrivalled supply chain provides the scope, experience and know-how to support customers wherever they need us and expand the global waste infrastructure.



Landbell Group's unique global supply chain encompasses 1,900+ suppliers comprised of recycling companies and logistic providers across five continents.

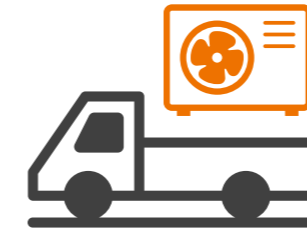
Andreas Bohnhoff
CPO, Landbell Group



1,900+
number of recycling companies & logistic providers



60+
audits conducted by Landbell Group



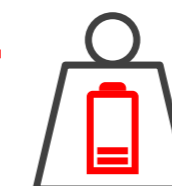
289,000+
pick-ups



385
number of corrective actions raised & followed up



190,000+
tonnes of WEEE treated in 2022



16,000+
tonnes of WBA treated in 2022



640,000+
tonnes of packaging treated in 2022

Software.



Digitisation, regulations, resource scarcity, circularity: the future is already here.

Ulf Hallmann
CIO, Landbell Group



Circul8: the home of circular economy efficiency

What started as local issues or initiatives, turned into a global challenge a long time ago.

A single product put on the market requires hundreds, if not thousands, of obligations to be met when sold internationally.

This is a good challenge, as it helps to protect our globe and its resources. However, it is impossible to manage the increasing complexity without next-level knowledge, processes, services and... software.

Meeting the challenge

In 2022, Landbell Group continued to invest in its comprehensive software suite to facilitate circular economy operations and manage extended producer responsibility (EPR) obligations.

Rollout of the Circul8 suite started at the beginning of last year and has made good progress. The system helps all players in the circular economy to comply with current requirements and be ready for future needs.

Circul8 covers all aspects of circular economy operations and manages EPR obligations. It is

built to support various user groups, ranging from producers, compliance schemes and authorities, through to logistics and recycling partners.

Circul8 accommodates various regulatory and market requirements and grows with the needs of customers and users.

The threefold Circul8 use cases (please see opposite page) can be introduced and used individually, while dynamically scaling with relevant customer or market requirements.

Circul8 is also integrated with Landbell Group's Knowledge Database, which is our central source of environmental regulatory information (see page 28).

Multiple considerations, one solution

For successful and compliant circular economy operations, the conversion of product and sales data into obligations, the transition of obligations into fulfillment, and the controlling of material and monetary streams, can result in a complicated challenge – especially on a global scale.

Circul8 combines solutions for all these challenges in one single system, which reduces complexity for producers and importers to an absolute minimum.

The software turns the one-face-to-the-customer approach into a true and tangible asset.

Circul8 also provides direct access to relevant information for each circular economy participant: dynamic changes in collection or supplier networks can be smoothly managed, commonly without programming; operations managers are perfectly equipped to manage all activities and monitor KPIs.

The software connects with third-party tools, such as mobile apps, sensors, scales, shopfloor utilities and surrounding IT systems. It leverages available data to continuously optimise the circular economy and sets the standard for efficiency.

Circul8 is the only comprehensive circular economy software suite that can be used instantly, independently from any enterprise resource planning system.

It is used by Landbell Group companies, as well as external customers and partners.

And it is produced by Landbell Group's iTeam. This team is constantly growing, and now consists of great colleagues from more than a dozen nationalities.

A highlight of the past year was watching the capabilities of this team – and the software that it develops – grow.

Circul8 manages

Transactions

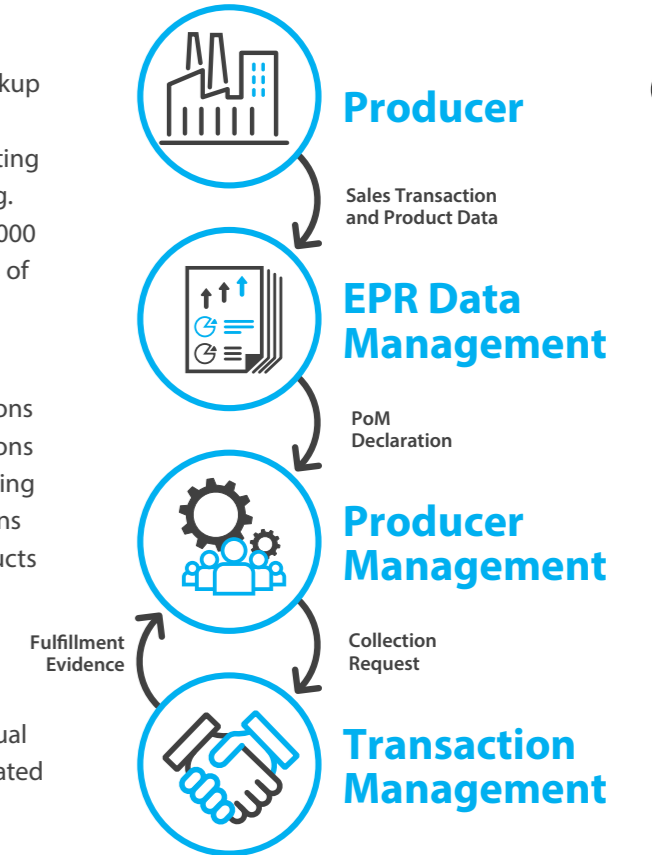
Running collection networks by handling pickup requests, coordinating supplier networks in a fully-automated way, tracing volumes, collecting evidence notes, and completing the invoicing. Last year, our systems handled a total of 500,000 transactions, covering about a million tonnes of materials.

Producers

Operating producer responsibility organisations (PROs) by collecting put-on-market declarations and running the related fulfilment and invoicing operations. Our systems managed declarations covering more than a million tonnes of products last year.

EPR Data Reporting

Calculating takeback obligations, optimising product end-of-life cost, and automating actual put-on-market reporting. Our systems generated almost 10,000 EPR reports last year.



Germany, Austria & Switzerland (DACH).



Foreword by Uwe Ehteler

COO for Germany, Austria and Switzerland

2022 was a year of change for us. Changes in legislation, especially in Germany and Austria, set the market in motion.

New obligations for marketplace sellers and fulfillment service providers, new registration requirements for packaging, batteries, and electrical and electronic equipment – here, in this chapter, are some examples of what kept our customers busy last year.

In response, Landbell Deutschland, Landbell DS Entsorgung and ERP Austria implemented various solutions to reduce the burden on our customers and ensure their compliance.

In addition to these operational and compliance topics, which all contribute to advancing the circular economy, we implemented a project that we are very proud of: Landbell Deutschland became the first scheme in Germany to form a groundbreaking cooperation with the leading chemical company, SABIC, to close the loop for hard-to-recycle plastic packaging through chemical recycling. The collaboration was underlined by a successful pilot project with our joint customer, Mars (see page 32).

Sustainability will remain an important topic for our customers in 2023 and we are working intensively on new projects and ideas to offer innovative recycling solutions.

Let's close loops together!



Markus Pache

Sales Director, DACH

In 2022, the packaging law amendment put fulfillment service providers under obligation and marketplace sellers in focus in Germany. Landbell Deutschland joined forces with marketplaces to keep them informed and set up a digital solution to support them.

Further packaging act amendments also led to severe changes regarding commercial packaging obligations. Again, we implemented solutions to address customer needs and ensure compliance.

Operative collections were managed by Landbell DS Entsorgung – another great example of Landbell Group combining its competencies to provide one-stop shop solutions for customers.

In 2022, Landbell Deutschland provided household packaging compliance to customers of all sizes: online through our EASyShop or via individual contracts and a key account service.

But our customers' demands extend way beyond the fulfilment of regulations: innovative recycling solutions and closing loops for packaging are high on their agendas.

That's why we support customers with our tailor-made solutions, including packaging optimisation (recyclability), access to secondary materials, and closed loop consulting – highlighted by our chemical recycling cooperation with SABIC.

There is a long way to go, but we're taking significant steps towards discovering the true power of resources and building a more sustainable future!



Sabine Balaz

Country General Manager, ERP Austria

ERP Austria offers compliance solutions for WEEE, batteries and packaging, as well as individual takeback solutions, and waste management consulting.

Last year, customers in Austria faced significant and challenging legislative updates, including the obligation for distance sellers of batteries to appoint an authorised representative (AR) from January 2022 and – most recently – the implementation of the new packaging law from January 2023.

In response to the new packaging regulations, we offer EASyShop solutions, AR services, digital notarised signatures, and favourable packaging licensing.

These services are highly appreciated by companies subject to the new EPR obligations – and we have acquired over 1,250 new EASyshop customers.

Last year, ERP Austria gained wide trust among customers with our comprehensive, efficient support and smooth response to the difficult regulatory changes.



Regional highlights

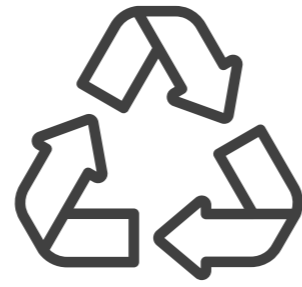
ERP Germany provides the full range of WEEE services to customers of all sizes. Our well-established operational business relies on a specialised network of suppliers and our highly professional team.

In 2022, WEEE legislation was amended to bring internet sellers into scope. Although new obligations for marketplaces and fulfilment service providers were pushed back from January to July 2023, an extremely high number of internet sellers came looking for support. Our services helped them to adapt and comply easily with the regulations.

Last year, we were delighted to introduce a new webshop, Click & Comply, which provides smaller customers with a convenient way to access services for WEEE and batteries at Landbell Group.

In December 2022, we also received the dedicated permit – in line with the new regulations from the German WEEE register (Stiftung EAR) – to continue working as an authorised representative for customers in 2023.

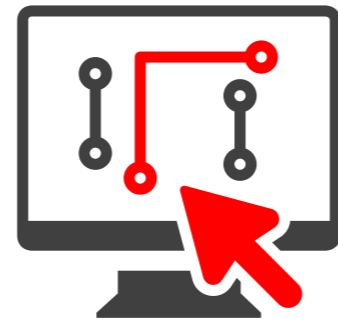
We are pleased to report that this combination of innovative and comprehensive services led to a large increase in customers (50%) in 2022.



Closing the loop



Increase in customers



Introduced new webshop, Click & Comply



Ellen Hitschler
Managing Director, DS Entsorgung

Landbell DS Entsorgung specialises in site and local branch disposal, as well as the takeback of commercial packaging in Austria, Germany and Switzerland.

Last year, we continued to successfully operate the battery compliance scheme, which we founded in 2020. We also cleared empty PET beverage bottles from deposit return points.

Due to amendments in the WEEE legislation, we started offering a OnetoOne takeback service for broken or old electronic devices from final consumers of online platforms. We observed a significant increase in monthly pick-up orders – from 100 to more than 600 – which we were able to manage smoothly in 2022. These numbers were also driven up by more frequent audits at distant sellers and platform operators by external experts and waste authorities.

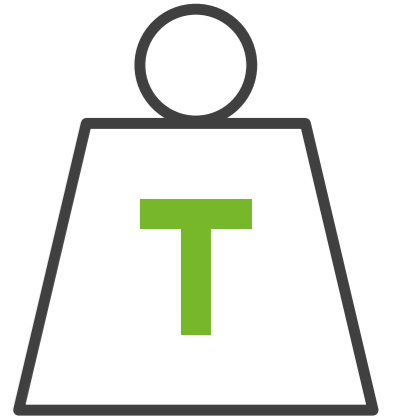
In 2022, we focused more intensely on offering tailor-made takeback solutions for our customers, as well as on organising our core waste management services (for all kinds of streams) for commercial customer chains in the DACH region.

Despite the undoubtedly difficult situation in the global economy, we managed to maintain our customers' trust by providing the highest quality services, reducing order lead times, and ensuring full compliance.

By taking back well over 9,000 tonnes of materials for our customers, we also helped them to unlock the power of their resources.

More regional highlights

9,400+
tonnes of material
handled in 2022



1,400+
tonnes of barrels and
intermediate bulk containers
collected and returned to
customers in 2022

Europe and North America.



Foreword by Grant Kinsman

COO for Europe and North America



In 2022, the legislative landscape focused even more on the circular economy: turning waste into resources and keeping these resources in the supply chain.

Throughout last year, our compliance and takeback solutions ensured that our customers' waste electronics, batteries and packaging could be reused, recycled or recovered – helping our clients to unlock the value of the circular economy.

We also expanded our product and chemical stewardship offerings to support our clients on their journey towards manufacturing safe, environmentally-friendly products and realising their sustainability goals.

Across Europe, for environmental compliance, we delivered consultancy, product takeback and compliance scheme operations for WEEE, batteries and packaging.

For North America, we provided environmental consultancy and product takeback – and, crucially, started our first compliance schemes.

For more than 25 years, Landbell Group has helped customers to limit their environmental impact. Our intention is to build on this legacy, exceed our clients' expectations for product and chemical regulatory compliance, and maintain the strong partnerships that we have built going forward.

Please read on for more insight into our work in Europe and North America.



Alberto Canni Ferrari

Head of ERP Southern Europe

In Italy, two companies actively supported customers in 2022.

Consorzio ERP Italia delivered EPR services to WEEE and battery producers, plus mandatory OnetoOne collections for professional EEE producers and distributors. In 2022, Consorzio ERP Italia collected 35,000 tonnes of WEEE (+17% versus 2021) and over 4,300 tonnes of batteries.

Last year, Consorzio ERP Italia also developed a WEEE compliance solution for marketplace sellers. This service helped online companies to meet their obligations and significantly boosted the amount of WEEE collected in Italy.

ERP Italia Servizi provided added value to customers by providing complex collection and recycling services.

The company also delivered takeback, treatment and reporting for a range of products, including lithium batteries, coffee machines and PV modules from large-scale farms.

On the Iberian Peninsula, ERP Portugal, Novo Verde and ERP Spain provided environmental compliance

for WEEE, batteries and packaging producers, plus takeback services, awareness-raising campaigns, and R&D projects with customers.

In 2022, notable achievements included implementing two receiving centres in Portugal, which manage more than 2,500 tonnes of WEEE and batteries and give ERP Portugal a better understanding of the mix of waste that they collect. Improved sorting also allows the company to sell more secondary raw materials.

Last year, to collect more packaging of a higher quality, Novo Verde also contributed to 25 TV episodes on CNN. Furthermore, the company developed a modulated fee that benefits packaging placed on the market with superior ecodesign.

In Spain, ERP developed new services to collect and treat coffee capsules for retailers. El Mundo newspaper also heralded the company's CirculArt project – which highlights the impact of waste on society – as one of the '100 best ideas of the year'.



Mikolaj Józefowicz

Head of ERP Eastern Europe

ERP provided compliance services for EEE, batteries and packaging in Poland and Slovakia. Both companies met the collection targets for these streams in 2022.

ERP Poland and Slovakia also delivered EPR consulting services, as well as custom-designed waste collection projects. In Slovakia, ERP engaged 440 kindergartens in a special educational programme which collected over 24 tonnes of waste portable batteries.

In 2022, both companies were on the front foot when it came to regulatory changes: ERP Poland started offering compliance with new lubricating oils regulations; it also successfully lobbied the Polish government to modify targets for PV panel collection.

Instead of a PV panel target based on put on market volumes (which is not achievable due to a lack of waste), Poland now has a collection target based on waste generated. A similar problem exists in Slovakia, where ERP is also playing an active role in discussions.

Last year, we also focused on working with disadvantaged people: helping the homeless community back to work through door-to-door WEEE collections in Slovakia; and supporting mentally handicapped people through WEEE collection events in Poland.



John Redmayne

Head of ERP Western Europe

ERP provided compliance services for EEE and batteries in the UK and Ireland, successfully achieving compliance for our members by collecting and recycling thousands of tonnes of WEEE and batteries from local authority recycling centres and retailers in each country.

ERP also provided packaging compliance in the UK, ensuring compliance for all our members there.

Our Data Service supports companies with the collection and calculation of product data for their compliance submissions for the UK and Ireland. We added new colleagues to support this service in 2022.

Last year, the UK introduced a Plastic Packaging Tax and the team added data calculations for this to our service offer, supporting existing as well as many new customers.

Innovative communications to raise awareness of the need to separate and recycle WEEE and batteries continued to be a hallmark of our work in Ireland - with eye-catching initiatives receiving excellent coverage.

In the UK, community initiatives were supported, including battery recycling competitions for schools, increased appliance reuse, and using a social enterprise to store and dispatch our flat-pack battery recycling boxes to customers.



Olli Alanen

Head of ERP Northern Europe

In 2022, ERP provided compliance services for WEEE and batteries in the Nordics. In Denmark, Finland and Norway, the compliance was delivered by ERP and, in Sweden, through cooperation with a partner.

In total, we collected 34,000 tonnes of WEEE and 600 tonnes of portable batteries last year.

In addition to taking care of producers' collection and reporting obligations, our companies supported producers with various voluntary services, including a reporting service for packaging, individual collection from B2B customers, transportation services, and environmental consultancy.

Our goal in the Nordics is to increase reuse and, last year, we began working on several initiatives led by our Norwegian team.

The business environment in 2022 for collection and recycling operations was difficult and this impacted collection costs and metal values. We responded by carefully managing the situation in cooperation with our suppliers to provide stability and reliability to our members.

In Denmark, we also announced that ERP will provide a packaging compliance service, when the new packaging obligations start to affect producers in 2025.

We are confident that the support and expertise of the other Landbell Group companies will make us a strong provider of packaging compliance in the Nordics.

Regional highlights



All recycling targets met



New services developed



100 best ideas of the year



John Hayes

Head of Compliance Solutions

In 2022, H2 Compliance provided regulatory support to a wide range of small and large clients for environmental compliance.

Our services focus primarily on EPR for waste electronics, batteries, and packaging and include assessing a client's compliance needs, completing registrations and reports, managing invoices, and keeping the client up to date with developments.

Last year, our environmental consulting team grew to 21 people, and it continues to expand to meet demand: we now ensure market access for more than 300 clients across Europe and beyond.

The team is also supporting customers with more obligations.

In France, for example, the Anti-Waste for a Circular Economy (AGEC) Law now captures many new waste streams, including textiles, toys, and leisure and sports articles.

In response, H2 Compliance developed its compliance support programme to help clients with the newly affected product categories – and we will continue to do so as new legislation around the world brings more products under the scope of EPR legislation.



Kevin Hoban

Head of Chemical Consulting

Last year saw active regulatory change for chemical compliance, which will have significant impact on our customers in the coming years.

Revisions started on the EU's REACH and Classification, Labelling and Packaging (CLP) regulations, and the US moved to modernise its own Hazcom scheme.

The regulation of "forever chemicals" – predominantly PFAS substances – also received significant attention in both the EU and US.

In 2022, H2 Compliance enlarged its global client base to allow more customers to place their products on international markets in full compliance with chemical control legislation.

To give more clients this peace of mind, we expanded our partner network to China and began providing services to Chinese companies selling to the EU. We also grew our ability to assist EU companies selling their products onto the North American market.

Furthermore, we expanded our services, software functionalities and team to improve support to customers for product and chemical stewardship, substances of concern, hazard communication, and the requirements of REACH, GHS and similar legislation around the world.

In 2022 alone, our consulting team prepared over 10,000 safety data sheets!



Dora Caria

Head of Circular Economy Engineering

Last year, global producers faced increasing demands for the takeback and treatment of their end-of-life (EoL) products, consumables, and packaging.

To support these companies, H2 Compliance delivered takeback services in 48 territories. We also managed over 23,800+ pick-ups and collected and recycled more than 7,000+ tonnes of resources – a 60% increase on 2021.

In 2022, online sellers also came under increasing pressure to meet their obligations under the WEEE Directive.

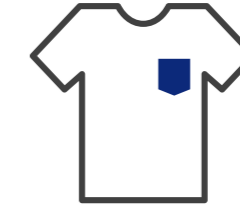
To support these sellers, the OnetoOne return scheme covered all e-waste categories in 21 countries in Europe – and, in some countries, we expanded the scope to include industrial and automotive batteries, as well as furniture.

In 2022, OnetoOne processed more than 21,000 transactions – double the traffic of orders in 2021.

To support customers' circular economy strategies, we also offered tailor-made services, including audit services, EoL technical studies, and treatment to EPEAT criteria. These services enhanced supply chain visibility and included items such as recyclability and reparability assessments.

A significant development in 2022 saw H2 Compliance consolidate its North America footprint, where it recycled over 2,000 tonnes in 2022 and successfully registered as a producer responsibility organisation for packaging, ITT/AV equipment and batteries in Ontario, Canada.

Highlights



New waste streams added



10,000+ safety data sheets



New PROs in North America

Africa, Asia & Latin America.



Foreword by Christophe Pautrat

COO for Africa, Asia and Latin America

In Brazil and India, we support ERP Brazil and Landbell GreenForest Solutions with the know-how acquired by Landbell Group over many years.

Drawing on this unique experience and the methodologies that we have developed, we are helping these countries to evolve the implementation of their EPR systems. We also offer software solutions for the management and digitisation of their circular economies.

In 2022, ERP continued to deliver waste collection and recycling services to the main producer responsibility organisation (PRO) in Brazil. We also secured a contract with a prominent packaging manufacturer for voluntary waste collections and extended our consultancy support to various stakeholders.

In India, our activities in 2022 mainly focused on the development of our waste plastic compliance services, which we delivered to large local and global fast-moving consumer goods companies, helped by our nationwide reach that we built through a network of reputable partners.

We also expanded our advisory services, which range from capacity building in EPR, through to supporting companies willing to invest in the plastic recycling sector or to sell equipment on the Indian market.

Read on for more detail on our activities in Brazil and India. For more information on the EPR advisory work carried out by my team in other parts of the globe, please see page 30.



Mara Ballam

Country General Manager, ERP Brazil

Last year, in partnership with our client, the main PRO in Brazil, ERP continued to implement a WEEE takeback system in 13 states and over 25 cities in the state of São Paulo.

This is a massive undertaking, which covers half of Brazil: it includes 2,700+ collection points and 22 consolidation centres, and benefits more than 69 million inhabitants.

We also supported the client and the federal government with the implementation of WEEE consolidation centres in Brazilian state capitals. Further developing the national network of collection points, consolidation centres and recyclers increased collections and ensured traceability of waste.

For packaging, ERP Brazil offered services, which guarantee the acquisition and traceability of packaging waste credits for post-consumer packaging. We also developed consulting services for national industry and advised the Brazilian government.

In partnership with the National Association of Paper and Wastepaper Wholesalers, and a large packaging manufacturer, we also ran a pilot project to increase the recycling rate and profitability of wastepaper.

Furthermore, we organised the takeback of packaging from a customer – collecting more than 30,000 tonnes of plastic and cardboard – to ensure the company was legally compliant and met its targets for 2021.



Saurabh Shah

Managing Director, Landbell GreenForest Solutions

Last year was the first full year of operations for Landbell GreenForest Solutions (LGFS). We worked hard to launch the company and signed up our first customers for:

- EPR services for waste plastic, electronics and batteries
- Advisory services for waste management

We further developed the plastic waste services that we launched in late 2021 and, in October 2022, launched EPR services for e-waste and waste batteries.

Our EPR activity took place against a moving backdrop – the guidelines for plastic, WEEE and batteries are still regularly evolving – and it will probably take a few years for them to stabilise. The latest move is for the government to digitise the entire reporting of EPR from brands and recyclers – something that Landbell Software can support.

In 2022, we carried out a consulting assignment for a major petroleum company, helping them with market assessment and partnerships to enter the recycling business. We also advised a German technology provider for municipal waste treatment, acting as their consultants for market entry.

We made a good start to delivering solutions for a clean India in 2022. I look forward to sharing more progress with you in next year's report!

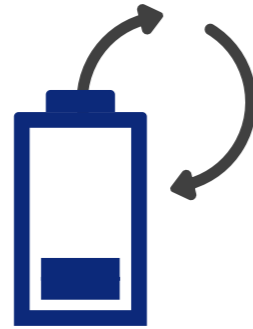
Policy and advocacy.

We aim to ensure cost-efficient extended producer responsibility (EPR) solutions for our clients with ambitious, yet realistic targets. We also advocate for harmonised obligations with reasonable administrative efforts and a level playing field for all actors.

As we aim to deliver effective EPR solutions for producers, in 2022 we closely engaged with their associations – for example, on a joint position paper with the European Portable Batteries Association (EPBA).

Transparency and cooperation

Landbell Group and its subsidiary, European Recycling Platform, are registered on the EU Transparency Register. Our contributions are visible there or on our website. Moreover, we contribute intensively to discussions, attend stakeholder workshops, support research, and contribute to studies conducted by the European institutions.



EU batteries policy

The proposed Battery Regulation aims to modernise the regulatory framework, reflecting the latest applications and technologies, as well as the high strategic importance of batteries for the European economy. Holistically addressing the life cycle of batteries, the proposal is considered a blueprint for other future legislation.

We closely engaged with the institutions addressing specific points such as the need for precise battery definitions, and a more realistic calculation method for collection targets based on waste that is “available for collection”.



New EU packaging policy

The revision of the Packaging Directive aims to adapt its requirements to developments in the packaging market and the overall targets of the EU’s Green Deal. The goal is to ensure that all packaging in the EU market is reusable or recyclable in an economically viable manner by 2030.

The Commission’s draft in November 2022 kicked off the political process. We supported the Commission with proposals and our study on modulated fees – and will continue to monitor and engage.



EU WEEE Directive

The evaluation of the WEEE Directive is expected to provide evidence on whether the Directive is still fit for purpose, explore any untapped potential for optimisation, and determine whether a review is needed.

We contributed to the evaluation, raising topics such as the need for a revised calculation method for collection targets, which considers the lifetime of products. We also asked for better enforcement and closer involvement of the consumer through coordinated awareness-raising.



EU Waste Framework Directive

The European Commission is planning a targeted revision to reduce waste generation, increase reuse, and improve separate collection for better reuse and recycling.

We contributed to the stakeholder consultation and will engage in the forthcoming revision process.



At Landbell Group, we have actively engaged with policy development at national and European level for many years now. Policymakers welcome our input because it is based on unique, multi-national, operational EPR experience for WEEE, batteries and packaging.

Dr Thomas Fischer

Head of Market Intelligence and Governmental Affairs

Regulatory tracking.



Landbell Group's regulatory tracking products help our customers and colleagues stay on top of existing, as well as upcoming EPR legislation for EEE, batteries and packaging – across the globe.

Anna Gajowniczek-Niebergall
Team Leader, Global Regulatory Tracking



In-depth regulatory tracking offers added value for our clients by enhancing their global competence and capabilities. This knowledge can be accessed via our tracking products – and supports Landbell Group's global advisory and consulting work.

KDB – our online tool

In 2022, we continued to improve and expand our regulatory tracking services, including the coverage of our Knowledge Database (KDB).

The KDB is an online legal database which contains EPR-related legal requirements for EEE, batteries and packaging. It keeps subscribers up to date with the latest regulatory changes on a global scale.

In just a few clicks, the KDB provides information on core producer responsibilities, including takeback, product design, consumer information, and registration and reporting.

All obligations are clearly referenced to the actual article in the applicable law – and all referenced laws can be found in a separate searchable library section.

Geographically, the KDB continued to move towards a truly global scope. In 2022, we added an additional region with more than 60 new jurisdictions: North America.

In total, the current scope of our regulatory service covers around 200 different jurisdictions worldwide in Europe, Asia Pacific, the Middle East and Africa, Latin America and the Caribbean, and North America (USA and Canada).

The KDB provides permanent access to information and is offered as a multi-user subscription for one or two years. The subscription also comes with monthly alerts on recent changes in the KDB.

Dedicated topic and country reports

In response to customer demands, we added two new types of report in 2022:

- Packaging marking report, including details on deposit, material and sorting marking (EU+EFTA)
- Plastic packaging tax report for countries that recently adopted such legislation (Italy, Spain, and the United Kingdom)

We continue to offer our At-a-Glance, In-depth, Customised and Legal Register reports, which cover the same expanded list of jurisdictions as the KDB.

The reports help producers to understand their EPR requirements quickly and easily in a different format.



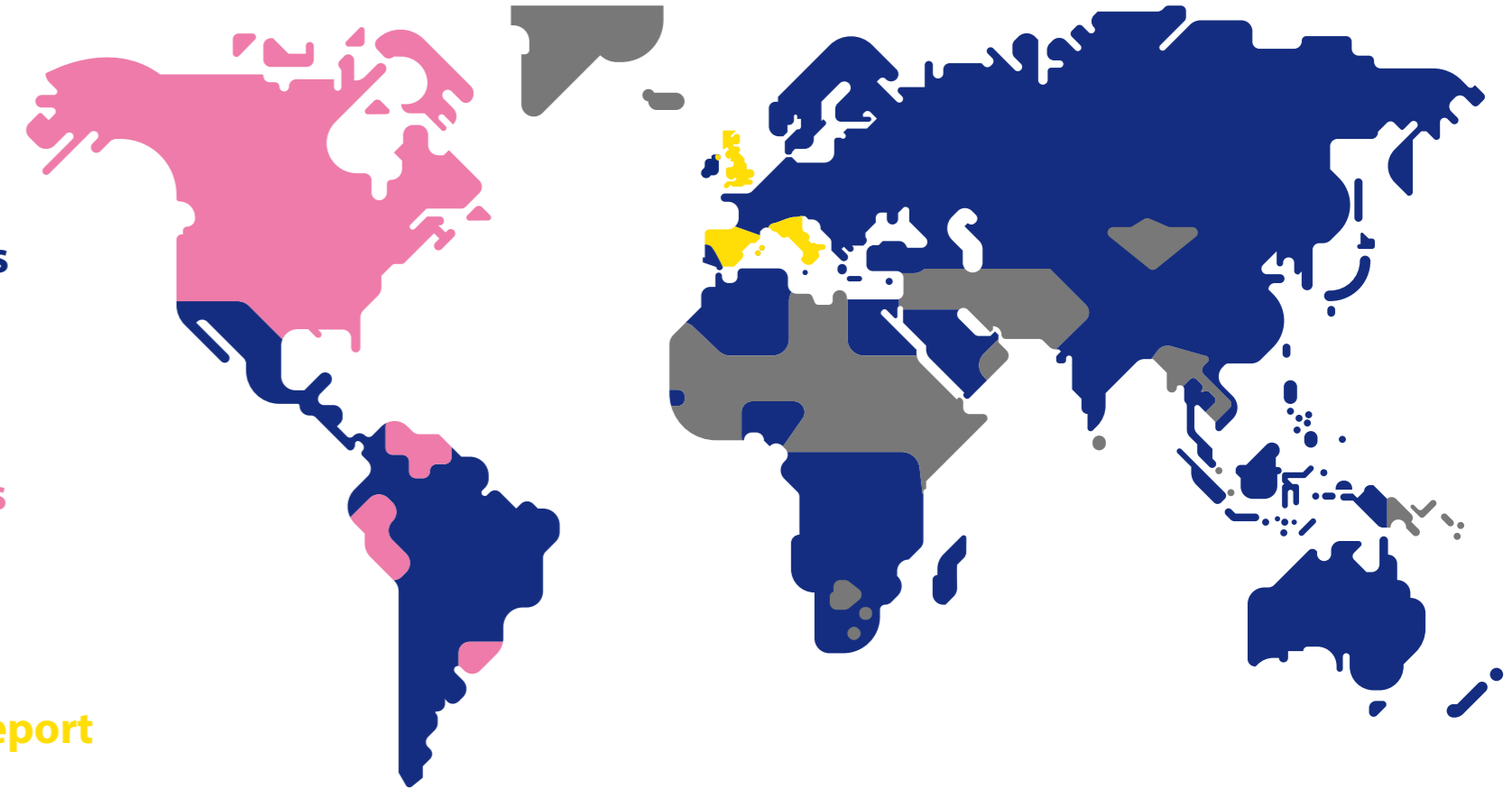
Jurisdictions covered in 2022



Jurisdictions added in 2022



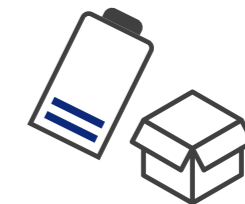
Plastic tax report launched in 2022



KDB covers **2,500+** legal references



KDB contains **50+** different languages



KDB available for **WEEE** batteries and packaging + material marking & plastic tax

Promoting the global waste infrastructure.

With a focus on low to middle income countries, we offer unparalleled expertise based on our experience of designing, building and operating EPR schemes since the 1990s.

This puts Landbell Group in the unique position of being able to offer practical and realistic solutions to our customers.

In 2022, we continued the expansion of our EPR advisory services, with activities ranging from policy framework developments, consulting on data management, and capacity building for public and private stakeholders alike.

Southeast Asia:

In 2022, we completed a project in Southeast Asia on plastic waste, where we supported local experts and stakeholders in Indonesia, the Philippines, Thailand and Vietnam. Learnings were presented during the ISWA conference in Singapore in September 2022.

Balkans, Latin America, and East and West Africa:

Last year, we also completed the 2-year project on problematic e-waste fractions and innovative finance models that led us to develop solutions in three continents and deliver training on waste plastics and batteries in three languages.

Egypt, Morocco and Tunisia:

The multi-year project, TouMaLi, addressing marine litter in the tourism sector of the south Mediterranean gathered momentum in 2022, with the selection of pilot areas in Egypt and Tunisia. The project was also kicked off in Morocco. Our contribution included the development of financial models and capacity building for EPR.

Landbell Group also started a project in Tunisia, reviewing the management of several waste streams for the purpose of integrating circular economy principles and developing private sector involvement. The project will be completed this year.

Ghana:

Additionally, we kicked off a project focusing on the development of EPR in Ghana, addressing the regulatory framework, institutional model, and e-registry design. The project will be completed in 2023.

Nigeria:

Our work in Ghana then led us to be selected to perform a similar mission in Nigeria.

India:

In India, we won a new project to “train trainers” on plastic waste EPR regulations and their practical consequences for various stakeholders.

EPR has proven to be an effective policy to finance waste takeback and recycling, while becoming more and more apt to promote waste reduction and ecodesign. That’s why more and more countries are embracing its concept.

With our practical experience, we can design systems that fit the specific characteristics of the jurisdictions that we support. Last year confirmed Landbell Group as a relevant partner for providing operable designs and solutions.



As EPR is continuously gathering interest globally, Landbell Group is in a key position to support the development and implementation of EPR policies around the world.

Aneta Zych

Team Leader, EPR Consultant, Africa, Asia and Latin America



Promoting better recycling.



Siddharth Bagri

Head of Recycling, Landbell Group

Chemical recycling

In an innovative pilot project, Landbell Deutschland teamed up with brand manufacturer Mars, and leading chemical company, SABIC, to recycle hard-to-recycle plastic packaging from households, thus closing this challenging loop in a high-quality way.

Landbell Group identifies which plastic packaging waste collected and sorted is suitable for the chemical recycling process. If the packaging meets the technical specification, Landbell Group then prepares it for chemical processing.

Through a pyrolysis process, SABIC recycles used mixed plastics at a molecular level. Waste plastic is heated to very high temperatures in an oxygen-free environment and broken down, producing pyrolysis oil.

SABIC uses the pyrolysis oil as a fossil raw material, which enables the production of new packaging and products that meet the strictest quality requirements and hygiene standards for food packaging.

After more than 20 months of intense collaboration, Landbell Group, SABIC, and Mars succeeded in closing the loop for complex plastic packaging through chemical recycling in 2022.

Mars is now using the recycled packaging material collected by Landbell Group and reprocessed by SABIC into certified polypropylene (PP) in the packaging of its snack bar brand, KIND.

InnoCErt

To create harmonised certification for the recyclability of packaging on a national and European level, Landbell Consulting joined the InnoCErt project, which is funded by the German Federal Office for Food and Agriculture.

InnoCErt is a 3-year project, which started in 2022 and will run until Q2 2025, involving five participating companies and institutes.

Landbell Consulting leads the operational part of the project, which encompasses trials and analysis of post-consumer packaging waste in Germany to create practical and innovative solutions for the avoidance, reduction, and recycling of plastic packaging.

The focus is on qualitative and quantitative waste flow analysis and identification of the recovery routes for different packaging waste streams and individual packaging types.

This work will contribute to a harmonised assessment method and certification, which can be used to incentivise producers to improve the ecodesign of their packaging.



Andrea Bizzi

Head of Operations and R&D, Italy

General update

In 2022, ERP Italia Servizi developed an R&D team to design and implement tailored recycling processes for waste that is not currently treated in Europe and to identify and anticipate future market trends, such as EV batteries and PV modules. The company is primarily investing in R&D to meet needs and requests from existing and new customers.

Last year, ERP Italia Servizi worked with a key partner on developing technology for sodium sulphur battery recycling and an end-of-life energy storage system. It also worked with a customer to develop an environmental and operational plan for recycling contaminated (hazardous oils) wood products.

The company has numerous proposals in the pipeline for 2023, including innovative and sustainable recycling technologies for batteries, WEEE, PV modules, wind turbines, packaging, and textiles.



Pedro Simoes

Country General Manager, Novo Verde

Tray-to-Tray Recycling

The Portuguese packaging scheme, Novo Verde, is promoting and validating an innovative solution with a view to segregating and recycling post-consumer PET trays, through an advanced mechanical recycling process.

This R&D project will make it possible for recycled PET trays to be incorporated in the production of new trays.

By promoting the upcycling of this type of packaging, we are working on solutions that close the loop, allowing the packaging industry and producers to offer the market more sustainable packaging.

This achievement was only made possible by combining the competencies of all the main stakeholders in the recycling process: civic amenities (Lipor), recyclers (Sulayr) and transformers/producers of packaging (Evertis).

Reciclar a Valer+

Last year, Novo Verde continued to run a pilot project at the Pingo Doce store in Malveira,

consisting of a reverse vending machine that delivers discount vouchers in exchange for PET beverage bottles.

This awareness-raising action led to the installation of a machine where consumers can place bottles of drinks and, for each delivery, receive vouchers of €0.02 or €0.05, which they can discount on their purchases at the store.

Since October 2019, this initiative has collected more than 1.3 million PET beverage bottles. This action supports the set of measures and general goals of the European Union in terms of waste management, as well as the European Strategy for Plastics, which stipulates that all packaging of this material, placed on the European Union market, should be reusable or easily recyclable by 2030.

This project shows that reimbursement systems can have a direct, positive impact on the collection rate of single-use plastic products, like plastic beverage bottles, and can therefore improve the quality of collected and recycled materials.



Green Alley Award.

In the race against climate change, we must back different options, ideas, solutions, and technologies, since we can never be sure which horse will turn into a unicorn in the end!

Finding these new and sometimes unconventional solutions for a circular economy, which also support our net-zero targets, is the mission of our unique startup prize, the Green Alley Award.

Winner of the 2022 award

An especially promising idea from last year was an electricity storage system, making the best out of used EV batteries, but also contributing to closing the gap in our renewable energy transition, created by our 2022 Green Alley Award winner, Voltfang!

E-mobility is an important puzzle piece in making transportation greener and more sustainable, as it reduces the amount of carbon dioxide emissions.

Considering the huge increase in the number of electric cars, the amount of waste batteries will increase accordingly. At the same time, households and companies increasingly aspire to become self-sufficient regarding their energy supply. However, the question remains: what to do with used EV batteries? Even though they contain valuable cobalt, lithium, and nickel, they are more difficult to recycle than the batteries from regular cars.

Our 2022 winner, Voltfang, a German startup, came up with a convincing solution: extending the life cycle of batteries from electric vehicles by repurposing the used batteries into energy storage systems for businesses. The benefits are numerous. From reducing carbon footprint to cutting energy costs, Voltfang's system is also scalable, adaptable and more affordable. The costs for used batteries are 30% below the average price for new batteries, while their predicted lifetimes are equal.

New ideas for 2023

In November 2022, we received 226 applications from 25 different European countries, covering the most important waste streams and issues in the circular economy. These hot topics ranged from solutions for the plastic challenge, and ideas on extending the life cycle of electronics, to technologies and services that make the textile industry more circular.

Even though the Green Alley Award is a competition with only one winner, every startup counts. We consider every single business idea that bears high potential and contributes towards creating overall value for a sustainable future in the long-term!

Which idea will triumph in 2023? We are looking forward to seeing what happens at the Green Alley Award final on 27th April in Berlin!



Heat, drought, wildfires – the summer of 2022 left no doubt: the climate crisis is taking hold of Europe and every little measure to reverse the trend counts.

Dr Raffaella David
Head of Marketing & PR



Breakdown of 2022 applicants



100%
circular economy applicants



35%
applicants are female founders



30%
applicants from Germany



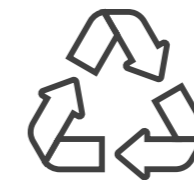
Breakdown of 2022 ideas



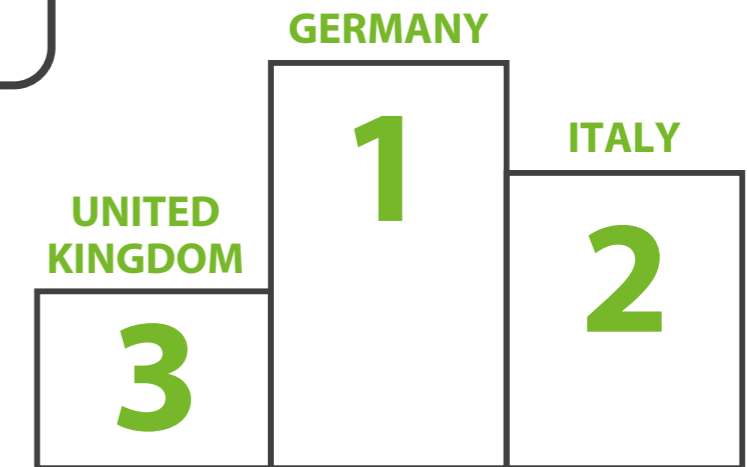
40%
waste prevention



33%
digital solutions



27%
recycling





Landbell Group is all about sustainability. Our services help reduce pollution, improve resource efficiency, and enable a more circular economy. However, we know that these contributions alone are not enough.

Dr Keshav Parajuly
Circular Economy Consultant



Our sustainability journey.

We understand that we must also be sustainable and responsible in how we operate as a business. And, as a business, we believe this is how we can truly contribute towards achieving global sustainability.

That's why, in 2022, we took an important step towards weaving sustainability into our business operations and decision-making: we introduced our group-level sustainability initiative.

We kicked off the process by setting up a cross-functional sustainability team. We investigated our operations and value chain, conducted a materiality assessment, and installed a group-wide data collection mechanism focusing on sustainability disclosures.

With the support of our leadership team and the guidance of external experts, we also identified topics and the areas of our impact. This helps us to pinpoint our priority areas and to create a baseline for introducing improvement programmes.

Our sustainability strategy focuses on engaging and addressing the needs of our key stakeholders. Therefore, we have started to reach out to the following stakeholders across the value chain in the process of developing our sustainability strategies.

Employees

We began engaging Landbell Group employees to shape our corporate sustainability programme. We asked everyone to identify topics that are important to us and enquired how Landbell Group as a company can create positive societal impacts. These topics go beyond environmental problems and cover a wide range of social and economic issues related to our business.

Customers

We also started collecting inputs from our valued customers. It goes without saying that every effort is made to serve our customers. We understand their expectations. We also understand the needs of our customers when it comes to sustainability disclosures. We are mindful of the need to achieve net zero and circularity, as well as align with upcoming policies and regulatory mandates around sustainability disclosures. And we are committed to helping our customers on all these fronts.

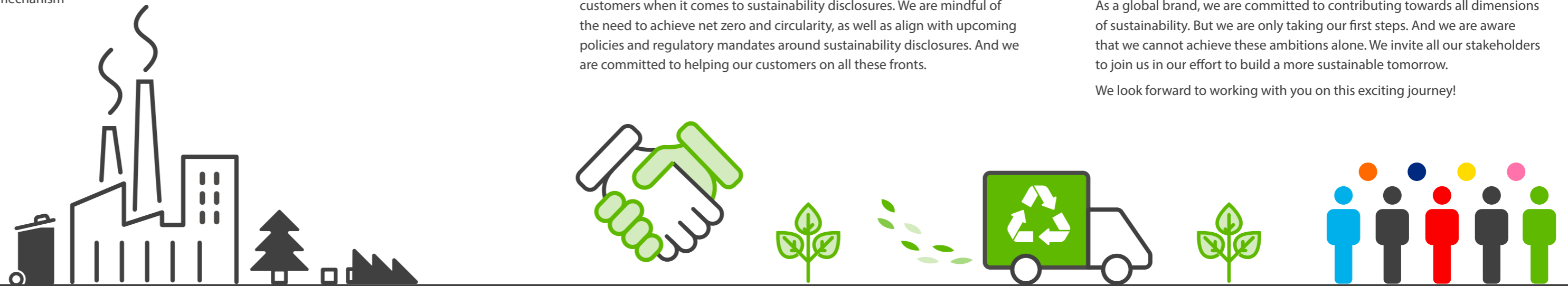
Suppliers

We began collaborating with our suppliers to take inventory of environmental and socioeconomic impacts across our supply chain. We must consider holistic sustainability and ensure fair and ethical business practices throughout our supply chain. Therefore, we are committed to working with our suppliers upstream and downstream to improve the overall value chain.

We recognise the importance of transparency and clear communication in our sustainability journey. We will regularly update our stakeholders on our progress and actions taken. As a first step towards this goal, we are pleased to share that our first sustainability report will be published later this year.

As a global brand, we are committed to contributing towards all dimensions of sustainability. But we are only taking our first steps. And we are aware that we cannot achieve these ambitions alone. We invite all our stakeholders to join us in our effort to build a more sustainable tomorrow.


We look forward to working with you on this exciting journey!





Join us. On the path towards a more **sustainable** future.


Find out more...





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