



Impact Report

2023



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Message from our CEO

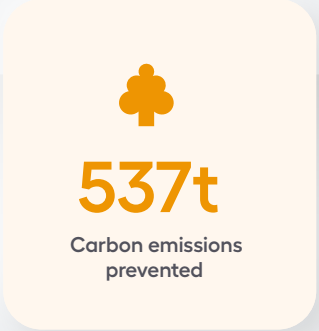
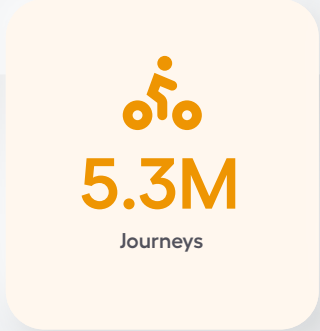


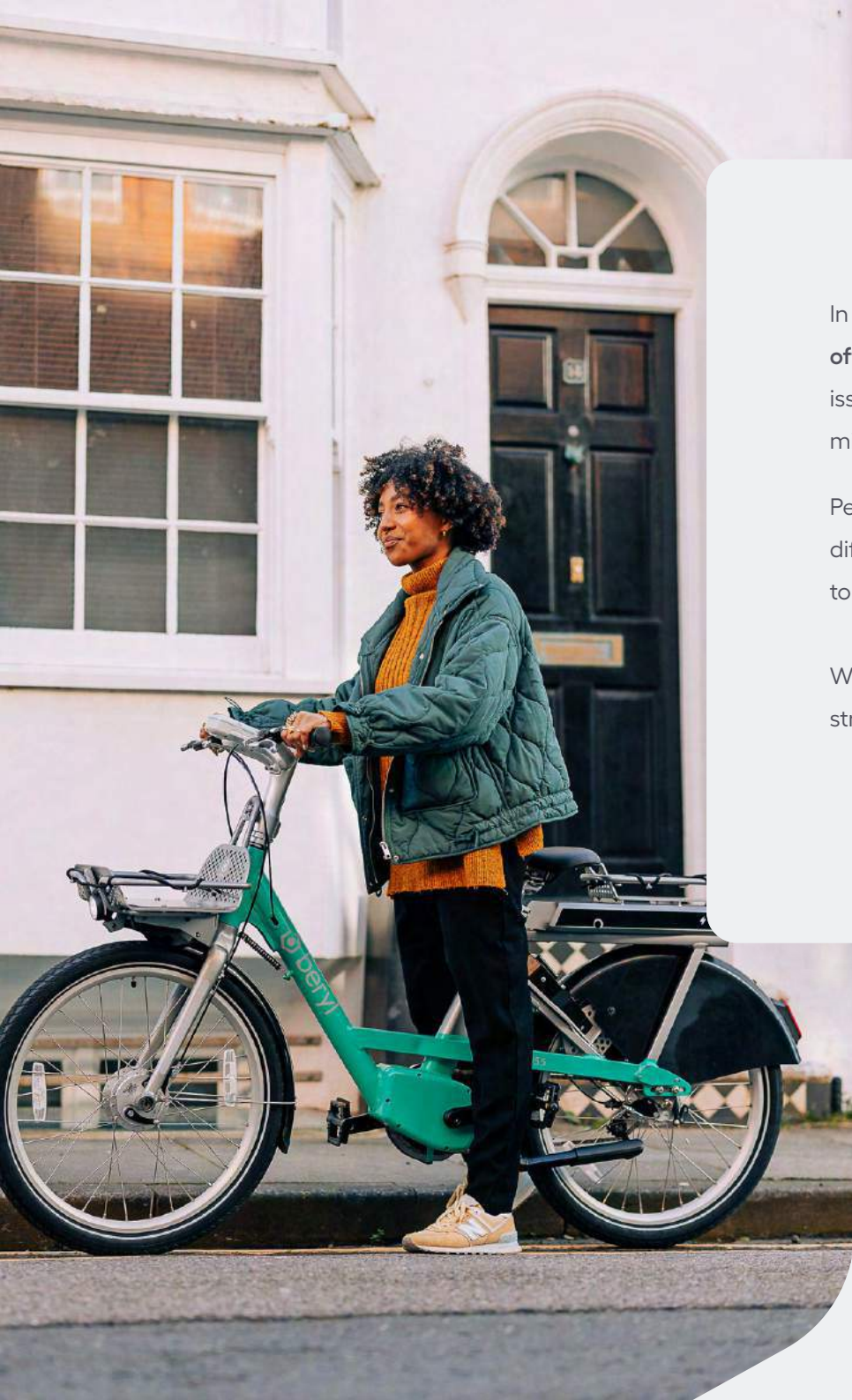
Welcome to Beryl's first impact report, a chance for us to share with you some of the great work being done to meet exceptional standards of **social and environmental performance, accountability and transparency.**

As a B Corp registered company, our mission is a simple one - to work with towns and cities, removing the barriers to sustainable travel by providing fun, convenient, cost-effective and simple-to-use services. By encouraging people to adopt more sustainable transport habits, we aim to reduce urban traffic congestion, while improving air quality and public health.

Since we launched our first bike share scheme back in 2019, we've generated over **5.3 million** user journeys across more than **16 million kilometres**, preventing **537+ tonnes** of harmful carbon emissions in the process. Our schemes play a big role in decarbonising the UK's transport system and delivering the energy transition.

Since launching our first sustainable transport scheme we have achieved...





In sustainability terms, **we practise what we preach and prioritise carbon reduction, offsetting our emissions through projects and initiatives.** Climate change is a huge issue and this report will highlight some of the fantastic things we are doing to minimise our carbon footprint and tackle the problem head on.

People and places also matter to us and we always strive to make a genuine difference to the areas in which we serve, going beyond shared transport provision to form partnerships and provide jobs, opportunities, skills and training.

We're more than just a service provider and I hope you enjoy reading about how we strive to meet our ambitious targets.

Phil Ellis
Beryl CEO and co-founder

Message from our Sustainability Lead



At Beryl, we believe that two wheels can make a world of difference. This report is a testament to our ongoing efforts so far, creating a positive impact on the environment, society and our business operations.

As the Sustainability Lead, I'm excited to take you through our journey of making shared transport even more eco-friendly and accessible. In this report, we will explore the initiatives, innovations and commitments that define our mission to **transform the way people move around cities, while minimising our environmental footprint.**

Join us on our journey towards a more sustainable future.

Sophie Nokes
ESG & Sustainability Lead

Our B Corp journey

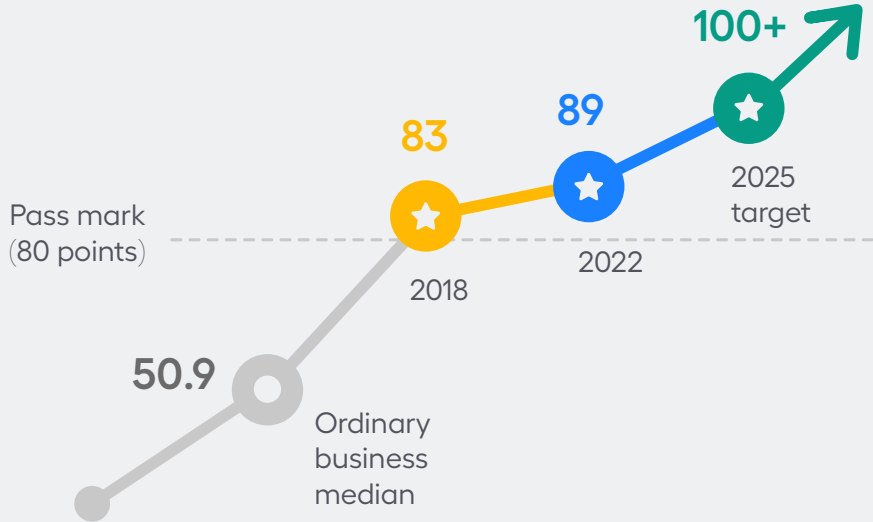


As a B Corp organisation, we're part of a global community of businesses that meet high standards of social and environmental impact. B Corp organisations are scored every three years, using the five areas in the B Impact Assessment, demonstrating that B Lab's standards are continuously met.

We first gained our B Corp status in 2018 and when we recertified in June 2022 we increased our score from 83 to 89!



Our progress so far



Our B Corp highlights

Governance

Our mission is simple, to make sustainable travel the easy and fun option in the cities and towns we call home. One way we track the impact of our shared transport schemes is by monitoring the modal shift of our riders.



In our last Rider Report, 38% of respondents had reduced their private car usage since using Beryl.

That number rose to 45% for riders who **use Beryl for commuting** and/or work purposes.

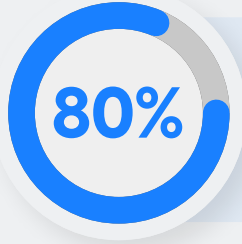
Workers

Our gender pay gap is positive towards women by



- ✓ We are a **Living Wage Employer**
- ✓ Ethical pension plan available
- ✓ Fully **paid volunteering days** for everyone
- ✓ Partnerships with educational institutions to provide work-study programs or internship opportunities, including those for young people with additional learning needs
- ✓ Regular employee satisfaction surveys

Community



% of our cost of goods sold spent within the UK has risen from 40-59% to 80+%.

- ✓ Part of the Cycling Industries Europe (CIE) Sustainability Working Group designed to improve social or environmental outcomes in the cycling industry
- ✓ Since 2020, 149 organisations have benefitted from our Community Champions Initiative



We have a **33/67** split in women vs men working in senior management and leadership roles.

25% of female Beryl employees are involved in company-wide decision making.



537 tonnes
of CO2
avoided



**ISO
14001**
certification

Switch
to renewable
energy
sources

Responsible
supplier

Audits

Environment

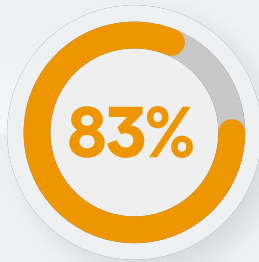
- Since our first bike share scheme started in 2019, we have prevented over **537 tonnes of CO2 emissions** as a result of the modal shift from cars to our bikes, e-bikes and e-scooters
- Achieved **ISO 14001 accreditation** for our Environmental Management System
- Set specific company sustainability targets that have been validated by the Science Based Targets initiative (SBTi)
- Conducted **life cycle assessments of our bike**, e-bike and e-scooters and can now measure the efficiency of travelling by those modes over private vehicles more accurately
- Partnered with specialist accredited recycling providers to **minimise our waste**
- Made the switch to renewable energy sources
- Conducting **responsible supplier audits**, which include environmental and social checks

Customers

- ✓ We have expanded to **19** more locations since 2019, increasing accessibility to our schemes and contributing further to the decarbonisation of UK transport

We provide outstanding customer service 364 days a year and close off customer enquiries through our app and website in just 5 minutes and 5 seconds on average. Of these enquiries, **88.8%** of customers provided a 😊 or 😄 for our customer service.

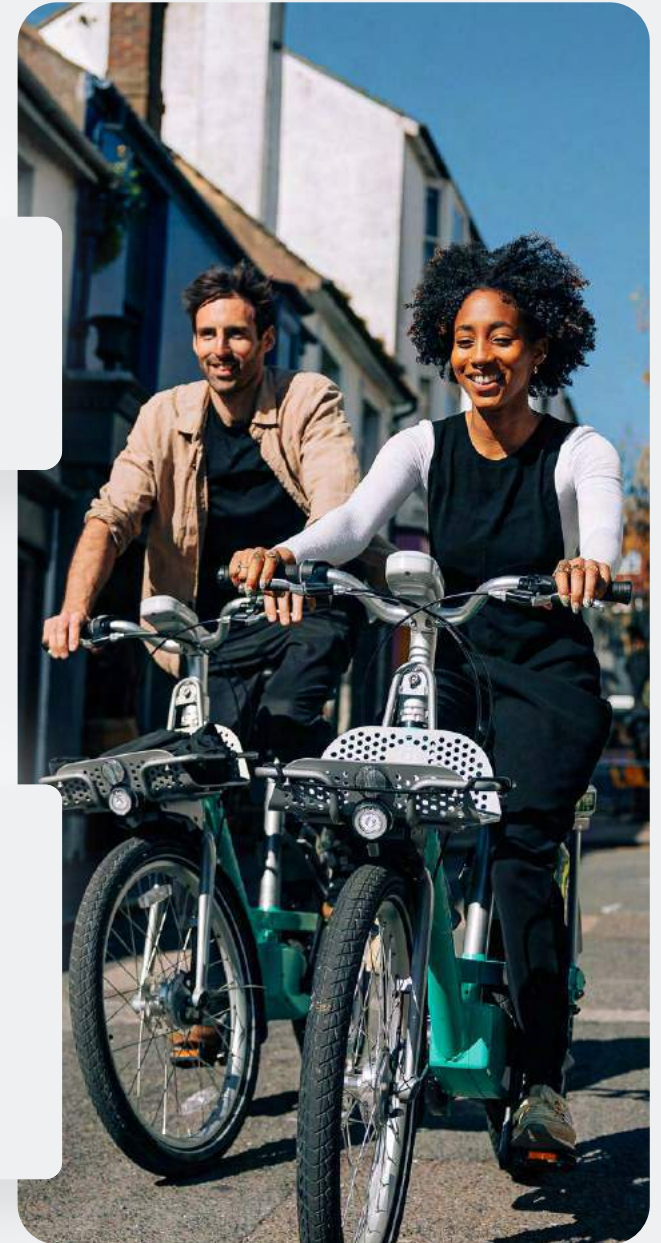
- ✓ Our end-of-journey survey is used to report on customer behaviour change



Riders who make the switch from a car journey to one of our bikes or e-scooters can decrease their carbon footprint by up to 83.73%



In our most recent Rider Report, over 60% of respondents had replaced a private car/van/taxi/motorbike trip with a Beryl trip





Sustainable development goals



In 2015, the United Nations set out 17 goals, ranging from hunger to gender equality to the climate crisis. In light of our global challenges, the goals were designed to create a more sustainable future for all.

Without action from businesses, it will be impossible to achieve them. As a B Corp organisation, we have aligned ourselves to these goals, focusing on seven in particular. **Look out for these stamps throughout this report** to see how the work we're doing supports them.



Our Planet

Decarbonising the transport sector

Our business operating model is designed to have a positive environmental impact on society. As we continue to expand the number of shared sustainable transport schemes that we operate, we can deliver higher carbon savings through increased ridership and modal shift.

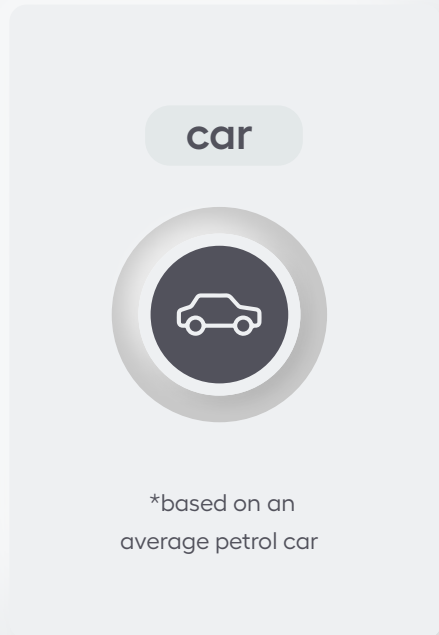


CO2 emissions are avoided when riders switch their journeys from high-emitting vehicle modes, such as cars, to our Beryl bikes, e-bikes, or e-scooters, which have a much lower carbon footprint.

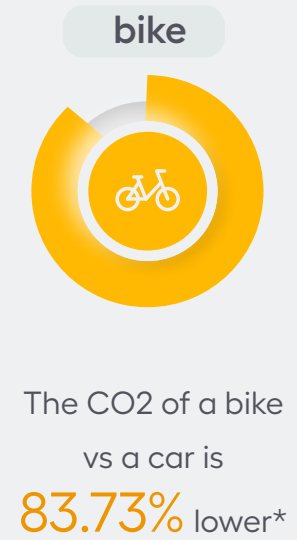
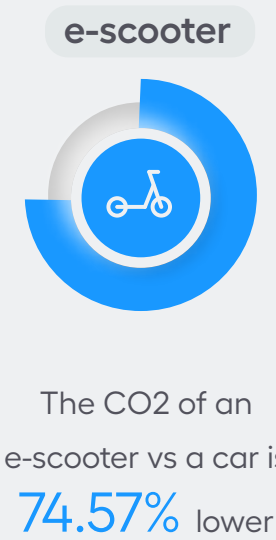
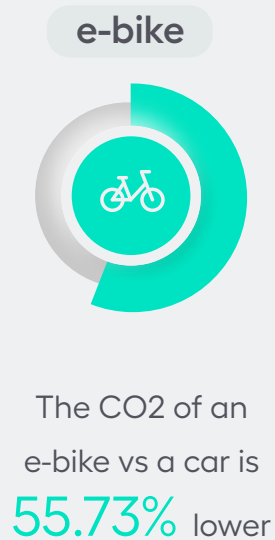
Since Beryl launched its first scheme, our riders have made 16 million km of sustainable transport journeys across the UK cities (**that's nearly 300 journeys around the Earth**) and we have prevented more than 537 tonnes of carbon emissions.

Our average modal shift is **34.68%**

A comparison of a car vs our modes



VS



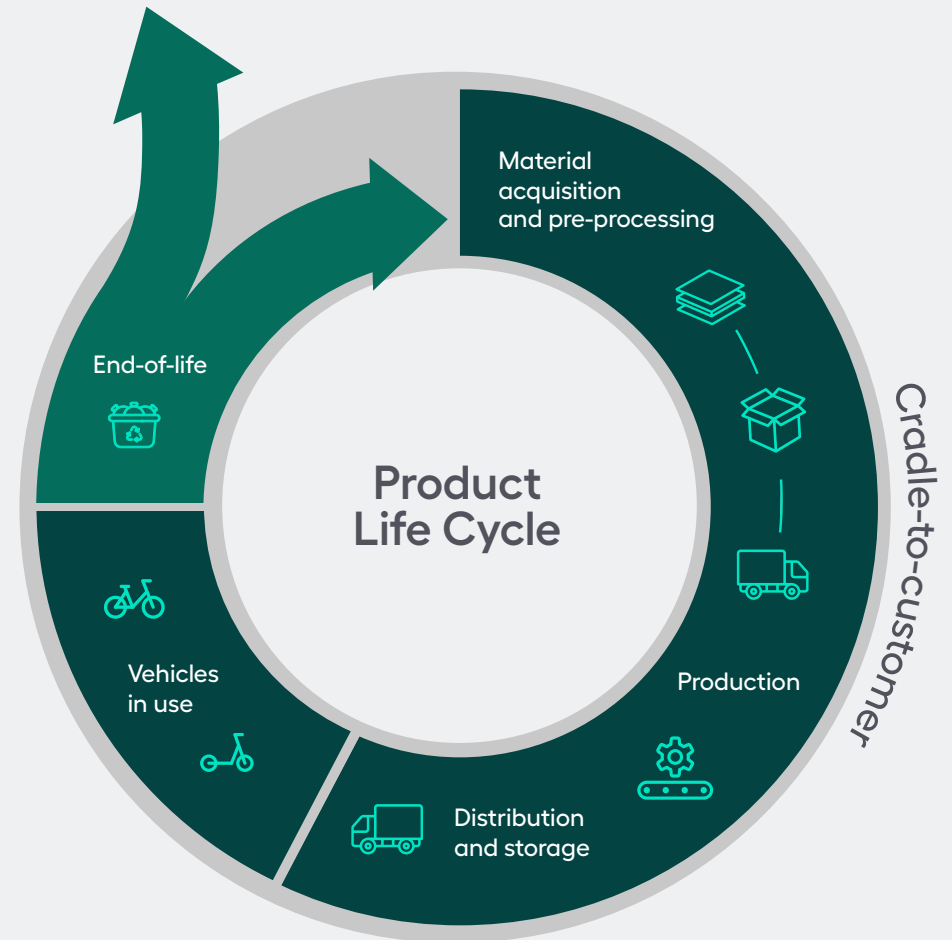
*based on modal lifecycle comparisons per passenger per km

Life cycle assessments (LCA's)

Our business is built to offer a sustainable solution to help tackle the **climate emergency**. However, we know that the production, use and eventual disposal of our vehicles has an impact that we try to reduce as much as possible.

We now measure the whole life cycle impact of our main modes of transport - our bikes, e-bikes, and e-scooters. This means we can better monitor, and therefore work to reduce, the impact of our business on the planet. The diagram on the right details the boundary of our assessment.

By gaining visibility of the highest-emitting stages in the product life cycles, as well as the highest-emitting bike and scooter parts, we can prioritise where we need to reduce our emissions the most.



Product life cycles at Beryl

Design

Design is critical to the choices made about the product, including what materials to use, suppliers, longevity, and end-of-life. At Beryl, our designers think about the whole life cycle of the product, carefully taking into consideration the environmental and social impacts. Our Beryl bikes and e-scooters are high quality, with interchangeable parts, easily repairable and recyclable.



Materials extraction and refining

Our bike and e-scooter production starts in mines and factories. Various raw materials are extracted from the ground (or cultivated in the case of natural rubber for the wheels) and refined into materials that can be used in the production of components. Sustainable sourcing is important to us and we are working hard to align our supply chain with our B Corp values.

Manufacturing

The supply chain is a complex topic and having full transparency is the ultimate goal. The majority of our components are sourced from China and Taiwan and we are always working to see how all of our parts are made. We ensure that suppliers align with our core values of responsible sourcing and sustainability. Our components travel to us by land or sea and very minimally by air freight.

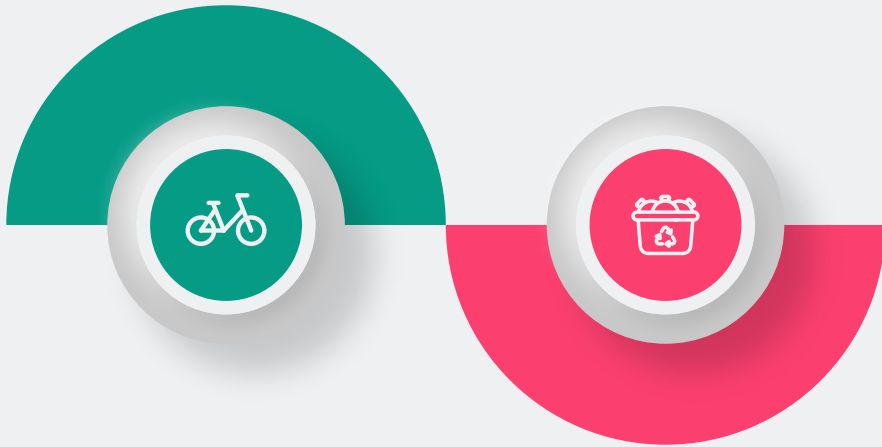
Assembly

We assemble bikes in our UK depots to lower the transport emissions when delivering to our schemes. Our assembly hub runs on 100% renewable energy.

Product life cycles at Beryl

Product use

After our quality control tests, our vehicles are on-street ready for members of the public to hire. We encourage riders to look after themselves and our bikes and e-scooters to prolong the lifetime of them. Our specialist on-street and workshop teams work together to carry out regular checks and repairs, ensuring vehicles are kept on the road for maximum lifetime use.



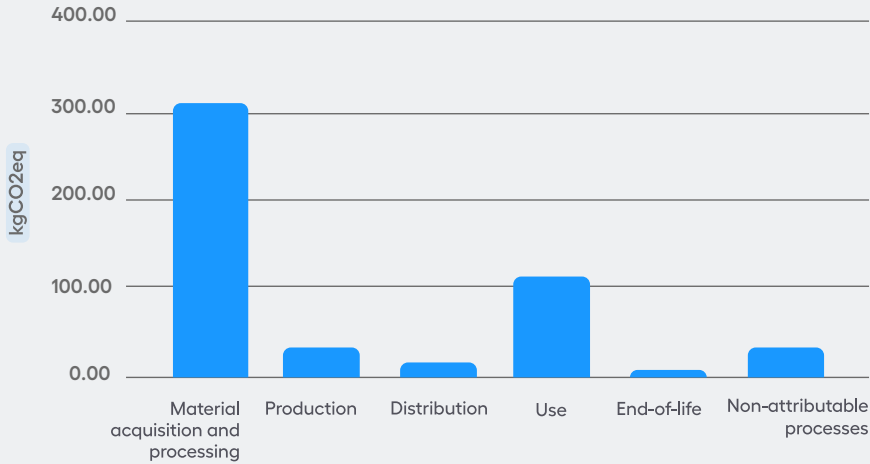
End of life

When a bike or e-scooter cannot be repaired or upcycled, it reaches its “end of life”. We aim to recycle as much of the vehicle as possible, including hard-to-recycle waste such as lithium-ion batteries, bike tyres and inner tubes with our accredited recycling partners. We aim to reduce, as much as possible, the amount of waste sent to landfill and maximise circularity.

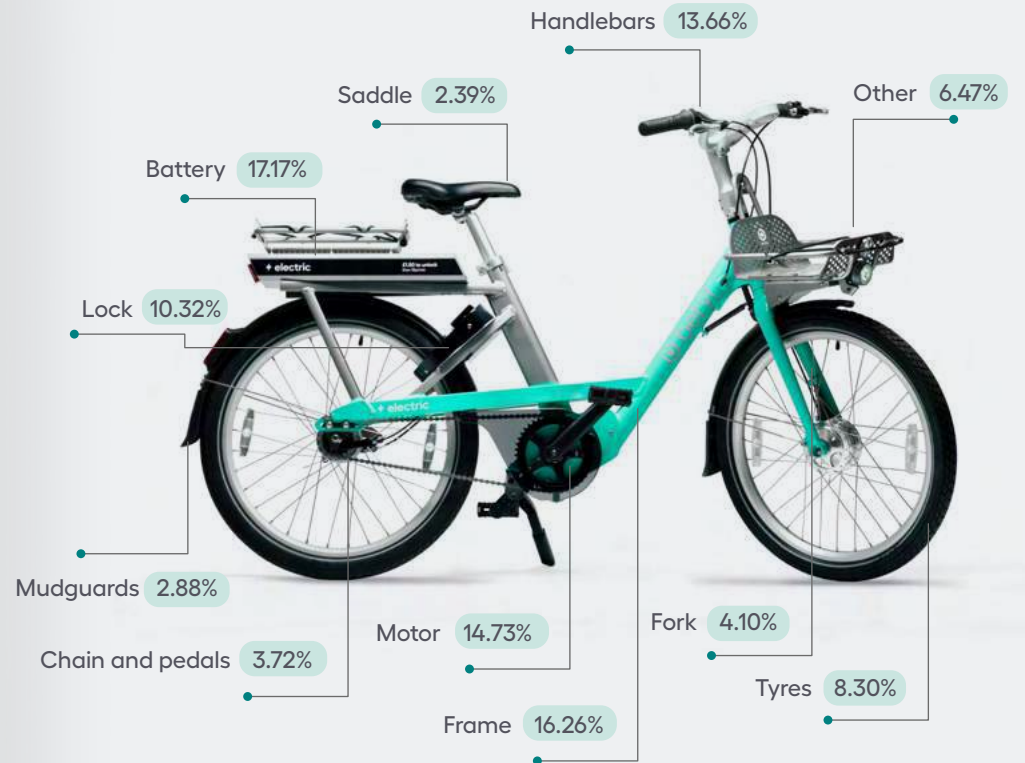
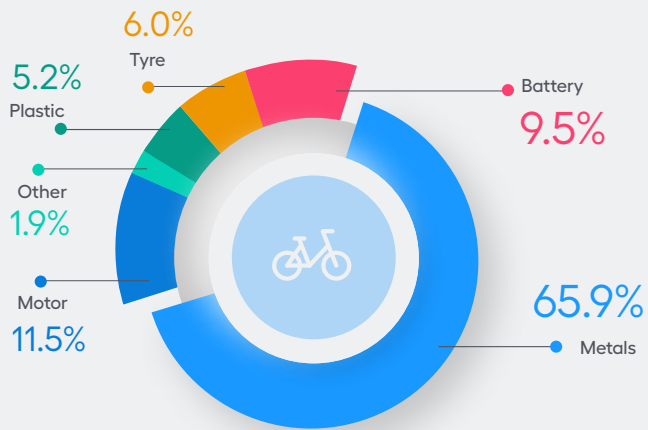


Beryl e-bike life cycle assessment

GHG emissions produced



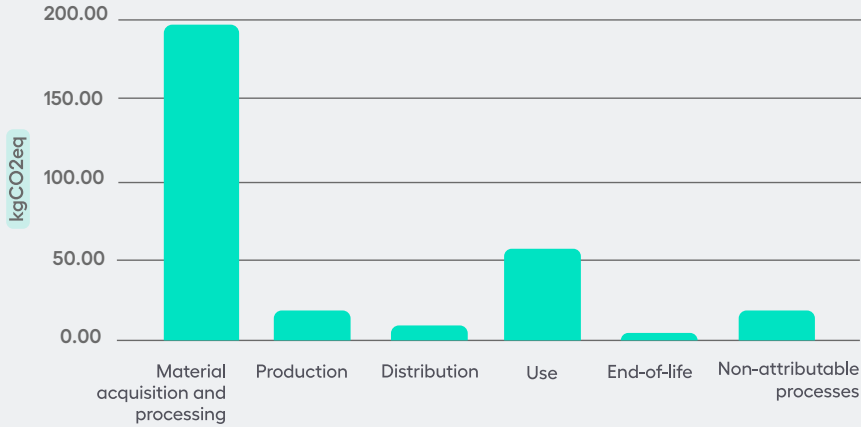
% weight of e-bike parts



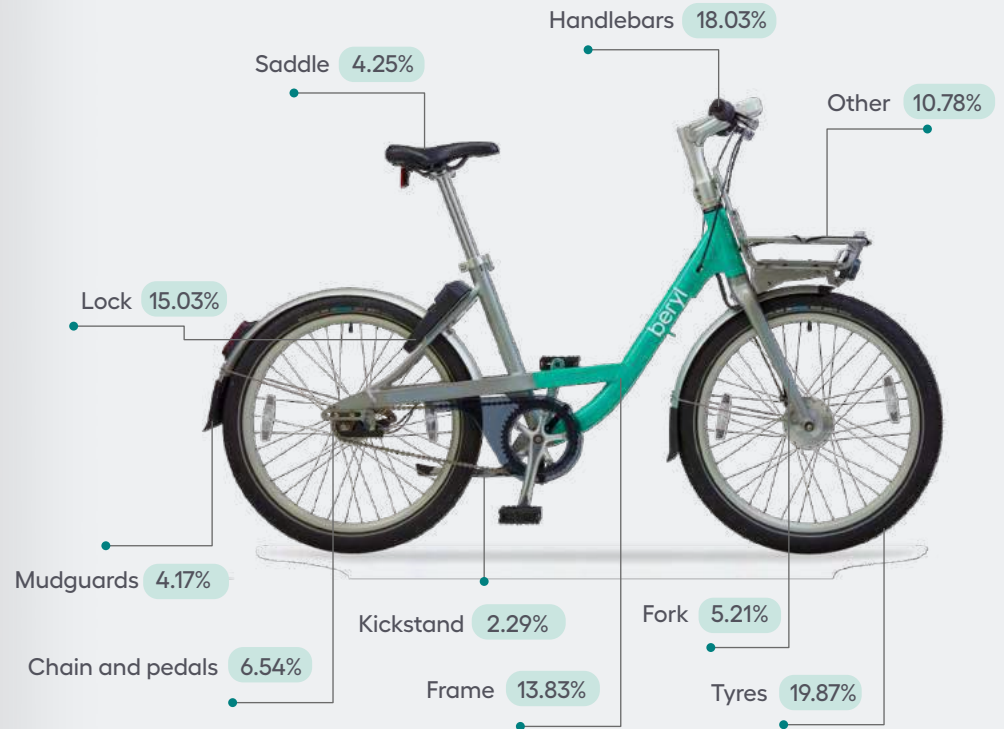
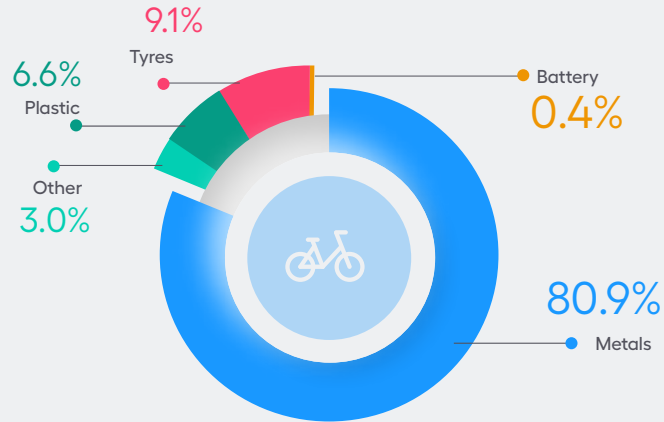
E-bike total carbon footprint breakdown by parts (%)

Beryl bike life cycle assessment

GHG emissions produced



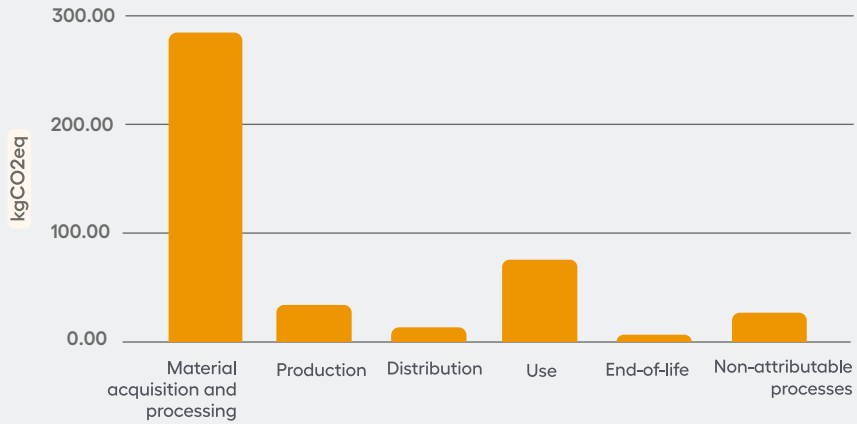
% weight of bike parts



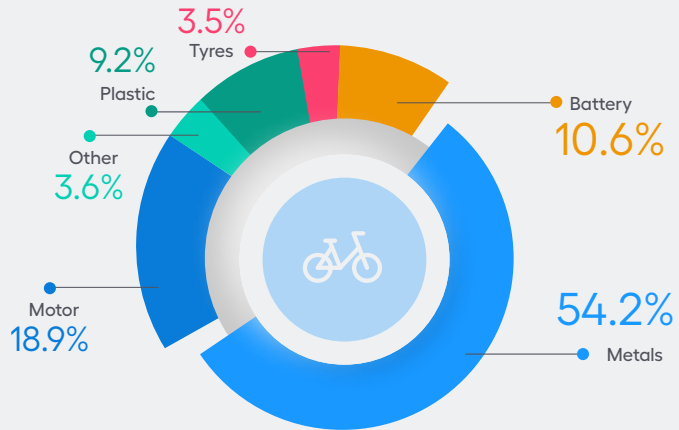
Bike total carbon footprint breakdown by parts (%)

Beryl e-scooter life cycle assessment

GHG emissions produced



% weight of e-scooter parts



E-scooter total carbon footprint breakdown by parts

Here's how we compare

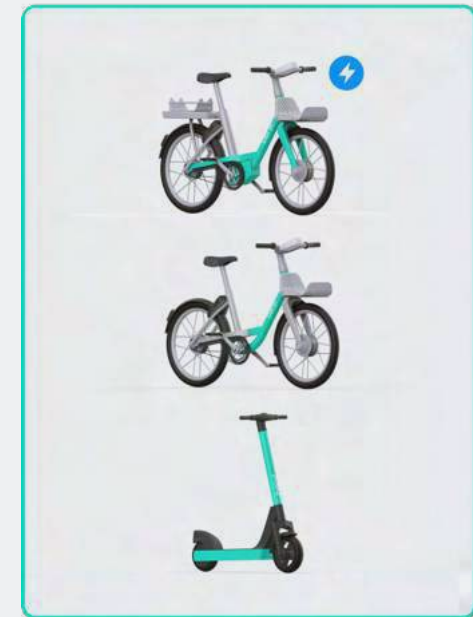
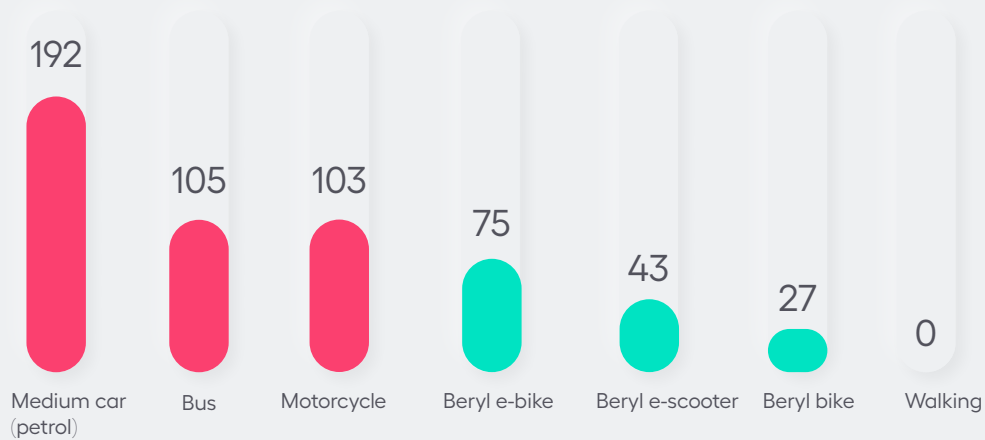
60% of respondents from our latest Rider Report had replaced a car/van/taxi/motorbike trip with a Beryl one.



71%

71% cited environmental impact as being 'somewhat important' or 'very important' when choosing to use our service.

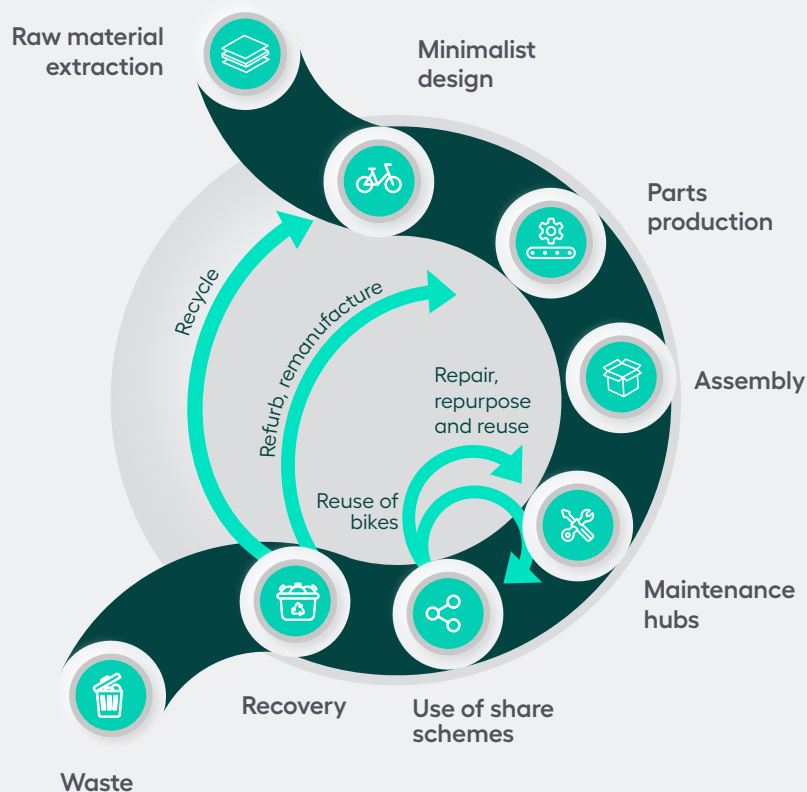
Travel carbon footprint (gCO₂eq/ km per passenger)



Circularity

By offering the hire of bikes, e-bikes and e-scooters as part of our schemes, our resources are shared for public use. The way we support a circular economy is by encouraging and promoting a “hire and share” model and moving away from a “buy and own” one. The higher our ridership, the more we drive circular behaviour in the transport sector and our society.

Ways we are working towards a circular economy



- ✓ **Innovative design** - Design is critical to the choices made about the product, including what materials to use, suppliers, longevity, and end-of-life. At Beryl, our designers think about the whole life cycle of the product, carefully taking into consideration the environmental and social impacts. Our Beryl bikes and e-scooters are high quality, with interchangeable parts, easily repairable and recyclable
- ✓ **Sharing is caring** - By using our fun and accessible shared transport range, the need for individuals to buy their own is reduced
- ✓ **Working for people** - According to our Rider Report, 45% of all riders use Beryl for commuting and/or work purposes



Circularity continued...

- ✓ **Reducing waste** - Our resources are professionally maintained by our local operations teams, providing a second, third, or even fourth life after the initial hire use is over. 100% of hard-to-recycle batteries, tyres and innertubes are recycled with specialist accredited recycling partners
- ✓ **Recovery** - Some parts return to the manufacturer for full refurbishment and reuse, including batteries, motors, and IOT units
- ✓ **Protecting our local environment** - We work with local authorities to recover and renew any missing vehicles
- ✓ **Cutting down carbon emissions** - The convenience, simplicity and comparative low-cost of our vehicles makes them an ideal sustainable alternative to private vehicles, demonstrated by our 34.68% average modal shift from cars to bikes/e-scooters



Our carbon footprint

We have a verified science-based target! Our carbon reduction targets have now been validated by the Science Based Targets initiative (SBTi) in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to 1.5°C above pre-industrial levels.



Beryl has committed to reduce its **Scope 1 and Scope 2 greenhouse gas emissions 38% by 2030** from a 2021 base year, and to measure and reduce its Scope 3 emissions by 2030.



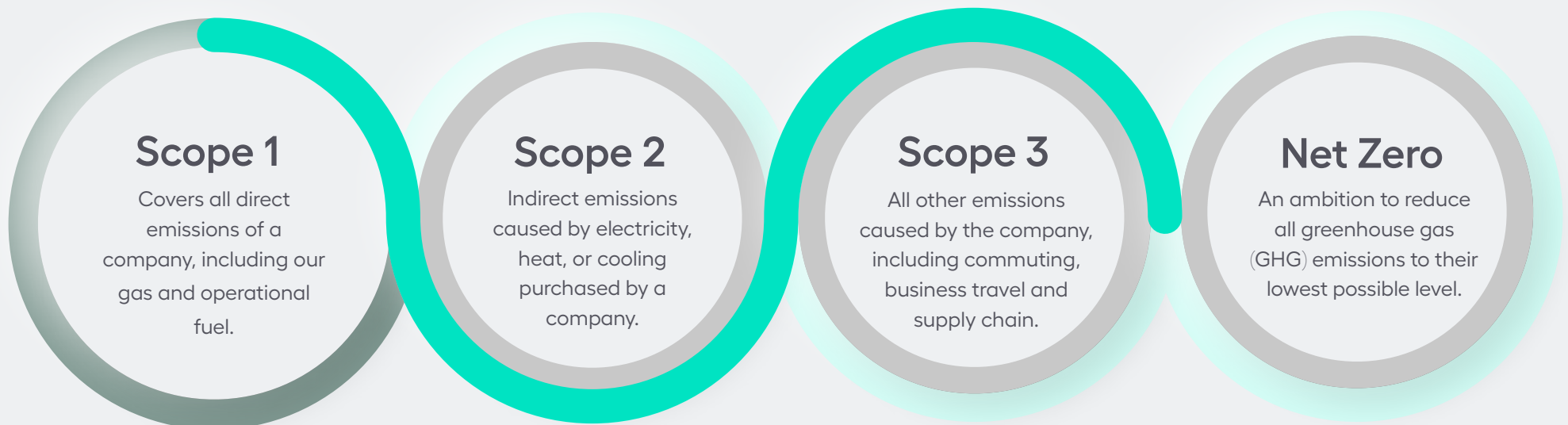
Carbon footprint



As a micromobility provider, our vehicles are powered by either people or electricity and our systems already play a big role in decarbonising the UK's transport system. However, we also want to make sure that we minimise our impact as much as possible in our day-to-day operations.

In line with the GHG protocol, the measurement of our greenhouse gas (GHG) emissions is broken down into three categories: **Scope 1, Scope 2, and Scope 3**. We recognise that Scope 3 is the biggest emitting category and only providing solutions to our Scope 1 & 2 emissions is simply not enough.

Beryl is committed to reducing our GHG impact across all areas of our business. The ultimate goal is to reduce emissions down to zero (or as close as possible). While working towards this goal, we offset our emissions through **Climate Partner**.

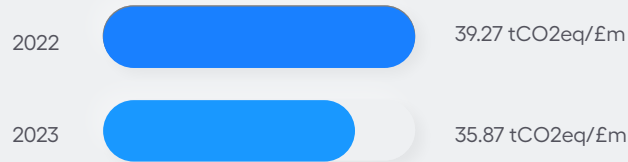


Progress so far

Since Beryl opened its first scheme in April 2019, we have rapidly expanded to 19 more locations across the UK. This has naturally increased our overall total emissions, with a growing Beryl team and multiple sites to manage.



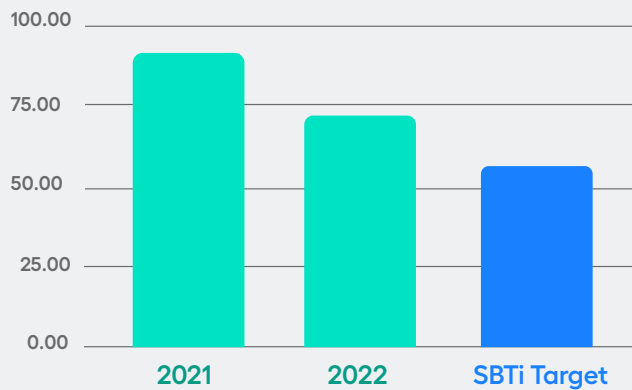
Despite this, we have still worked hard to reduce our emissions where possible. Our overall carbon footprint per million revenue (£) has **decreased from 39.27 to 35.87 tCO2eq/£m** revenue from the financial year end 2022 to 2023.



Scope 1 & 2

Since we set our science-based target, **we have already decreased our Scope 1 & 2 emissions by 20.86%.**

Reducing our Scope 1 & 2 emissions



Here's how we did it:



We are switching our operational vehicles to 100% electric (including use of cargo bikes)



We have downsized our HQ office, maximising space and reducing our footprint



71.52% of our operations now run on low-impact renewable energy



We have reduced our gas usage by **89.46%** and where we haven't removed gas usage, we have replaced with sourcing biogas

Scope 3

From the financial year end 2022 to 2023, we have also made further reductions:

You can read our Carbon Report [here](#) for an overview of our emissions.



Business waste tCO₂

decreased by:

33.23%



Hotel stays tCO₂

decreased by:

26.67%



Home working tCO₂

decreased by:

6.93%



Business travel
tCO₂ per FTE

decreased by:

8.62%



Commuting tCO₂
tCO₂ per FTE

decreased by:

21.77%



Our commitments

Industry pledges

Our shared urban transport services are central to the mobility and sustainability revolution. However, our industry needs to accelerate efforts to become as climate-friendly as our products. We have signed up to the pledges below with Cycling Industries Europe (CIE).



✓ Climate Action Pledge

We pledge to:

- ✓ Measure Scope 1 and 2 emissions, set a reduction target, and publish it by 2025 at the latest - **Completed**
- ✓ Measure Scope 3 emissions (as a minimum step, your corporate footprint*), set a reduction target, and publish it by 2030 - **In progress**
- ✓ Create and publish a reduction target, with a clear strategy and a timeline - **In progress**
- ✓ Continually track performance and report progress achieved - **Ongoing**



✓ Sustainable Packaging Pledge

We have joined the Sustainable Packaging Pledge to reduce plastic packaging and eliminate unnecessary packaging throughout our supply chain. By 2025 we aim to:

- ✓ Work with our supply chain partners to reduce problematic plastic packaging and eliminate unnecessary packaging
- ✓ Work with supply chain partners to ensure that all supply chain packaging is reusable, recyclable, or compostable
- ✓ Working with supply chain partners to increase recycled content within packaging materials



Our Community



Keeping it local

Throughout our sustainable travel schemes across the UK, we value the local communities that we work with. From creating jobs and providing skills in growing sectors to planning bay locations and pricing options, each scheme is designed, delivered, and operated with the local community in mind.

Here are some ways we support our communities:

- ✔ Working with the community for the community, providing a public service
- ✔ Partnering with local businesses to operate and maintain schemes
- ✔ Employing local e-cargo bike companies for battery swaps
- ✔ Sourcing locally
- ✔ Contributing to UK supply chain

In the past year, **20-39% of Beryl's expenses (excluding labour) were spent with independent suppliers** local to the company's headquarters or relevant facilities.

Supply chain locations

- 1 Bedford - Smart IoT Unit assembled
- 2 Poole - Bike and e-scooter assembly
- 3 Kent - Docks & street furniture are manufactured
- 4 London - Our design team
- 5 Manchester - Supply hub
- 6 London - HQ





Beryl schemes and operational partners

- 1 BCP
- 2 Brighton and Hove - **South Coast Bikes**
- 3 Cornwall - **RideOn**
- 4 Dorset
- 5 Greater Manchester
- 6 Hackney
- 7 Hereford - **Pedicabs and Pedicargo**
- 8 Hertsmere
- 9 Isle of Wight
- 10 Leeds - **Velologik**
- 11 Norwich
- 12 Plymouth - **Bikespace**
- 13 Portsmouth - **GC Bike Repairs**
- 14 Southampton - **Hub Cycle Works**
- 15 Studland
- 16 Watford
- 17 Westminster
- 18 Wool
- 19 West Midlands - **Serco**

Community Champions Initiative

Beryl's Community Champions Initiative provides support to local charities, volunteer groups, or community organisations doing good for their local community. We support all of these groups by providing free access to Beryl, promoting sustainable travel for all. Our Community Champions can use the minutes in any way they see fit including:

Rewarding volunteers for vital work they have done

Providing support to clients who experience transport poverty

Organising bike rides to promote physical or mental well-being



Our Community Champions Initiative has supported **154** local charities, CIC, or volunteer organisations with **£22,350** worth of free rides.



By forging these partnerships and running events, we can support those doing good in their community.



Here are some examples of how our **Community Champions Initiative** has impacted local communities:

MyTime Young carers is a charity that recognises and celebrates young carers aged between 5 and 25. They provide young carers with access to the support, the friendships, and the opportunities that every child deserves. Under our Community Champions Initiative, we provide Bournemouth-based MyTime with complimentary rides that they use to help their day-to-day operation. This can be in the form of rewarding volunteers, helping outreach workers get around town or providing transport to the young carers they help.



MyTime employee **Jenny Young** said:



It's community support like this that really helps charities like ours; from recognising the amazing young carers that we support and the work that we do, to helping us reward our incredible volunteers – it's a wonderful way to give back to the community.



Using two-wheeled transport not only helps such organisations save money and reduce their carbon footprint, it also contributes more widely towards cutting road congestion, improving air quality and boosting mental and physical health.

New Hope is a Watford-based homeless outreach charity. By providing them with free minutes to use on the area’s bikes and e-bikes, Beryl enables their Outreach Plus team to quickly respond to the needs of vulnerable people sleeping rough in and around Watford. Using two-wheeled transport not only helps the charity save money and access people in sometimes difficult-to-reach areas, it also contributes towards cutting road congestion and improving air quality.



New Hope Outreach Plus Manager, **Steve Devine**, said:



New Hope Outreach Plus workers David Abrahams and Joe Hodgins using Beryl



The bikes enable us to respond to StreetLink reports and phone calls so much quicker than before and we have utilised them to go straight to a rough sleeper, meet with them and then bring them back to an outreach bed.

They really have been fundamental to our outreach service, **allowing us to travel twice the distance in half the time**. Covering more ground has been very useful and positive especially during our monthly counts, reaching new distances and areas that were once hard to reach.”



[Read here](#) about how we use our resources to help those who are doing good in their community.



Upskilling a green workforce

For each of our schemes it's important to Beryl to hire locally and provide internships and work experience opportunities. Our people are crucial to the operational delivery of our schemes and without them, we wouldn't be able to deliver CO2 savings in our local communities, creating a green workforce.

Experience is key

Internships, apprenticeships and work experience opportunities are a great way to gain hands-on experience and learn new valuable skills in the micromobility sector.

50%

Over 50% of all Beryl operating locations provide work experience, internships or apprenticeships.

One of our internship projects takes place with the BCP Council, which helps young people aged 19-25 with additional learning needs. **The project is aimed at those who have completed formal school and college but who need a final helping hand to gain paid employment.** Run and hosted by BCP Council, the interns complete employment and industry-relevant qualifications and spend 85% of their time on work rotations at Beryl. BCP Council Project Leader, Helen Lewis, oversees the scheme and believes the partnership with Beryl has been highly successful, with interns now gaining paid employment.



Opening doors with engineering

We currently work with The Academy – an organisation that specialises in recruiting engineering candidates with a non-technical background who want to move into the industry. The Academy focuses on a candidate’s aptitude for a career in engineering, looking at their wider skill sets and potential rather than their personal or educational background. The programme has allowed us to recruit some truly excellent candidates, including two full-time Junior Stack Engineers.

Professional development opportunities

Staff training and development isn't just important, it is vital. It helps to ensure that our staff maintain and enhance the knowledge and skills needed to deliver a professional service to colleagues, customers and the community.



We have had 31.5% of employees progress into a new role at Beryl over the past year.



100% of Beryl employees receive a **£500** training budget every year.



Awards



Transportation Project of the Year Award 2023 winner



We won the Transportation Project of the Year Award (under £5m) at the Chartered Institution of Highways & Transportation (CIHT) North West Awards alongside our scheme partners Transport for Greater Manchester. This award recognises outstanding examples of projects that demonstrate a contribution to the mobility of the community in the northwest of England.

Since launching in November 2021, the Greater Manchester cycle hire scheme has expanded rapidly and now serves a wide range of employment, retail, education, and leisure hubs such as the universities, the city centre, and Media City. To date, the scheme's bikes and e-bikes have generated over 436,000 journeys across more than 1.1m km, saving over 31 tonnes of harmful carbon emissions. It remains an excellent example of how when delivered both in partnership with cities and in consultation with communities and key stakeholders, bike share can form an essential part of integrated multimodal urban transport schemes.



UK's Best Transport Decarbonisation Project Winner



We won the UK's Best Transport Decarbonisation Project, alongside our partners BCP Council, at the 2023 MJ Awards in June. The MJ Awards are considered the highest level of recognition in the UK local authority community and this award recognised the achievement of the region's bike, e-bike and e-scooter share scheme in cutting congestion and improving air quality.

Our BCP scheme is a fantastic example of how we provide the best possible service for users by delivering in close partnership with cities and in consultation with communities and key stakeholders. The scheme has generated over 1.6 million journeys over 5.5 million kilometres since its launch four years ago. These journeys have removed over 225 tonnes of harmful carbon dioxide from our air.





Transportation Project of the Year Award 2023 winner



We won the Transportation Project of the Year Award at the CiTTi Transport and Traffic Innovation Awards alongside our scheme partners Transport for Norwich. This award recognises innovation in the area of shared mobility, such as bike share, scooter hire, car clubs, contactless payments and developments in multimodal and integrated travel. With its 225 pedal bikes, 25 electric bikes and 100 e-scooters, the Norwich scheme was entered due to its significant impact on getting more cars off the road and encouraging more people to adopt sustainable transport habits. The judges said that they were particularly impressed by the fact that the scheme has seen 600,000 journeys in just over two years, equalling nearly 70 tonnes of CO2 emissions saved.





Highly commended in the Delivering Clean Growth sector of the annual President's Awards for the Association of Directors of Environment, Economy, Planning & Transport (ADEPT) 2023



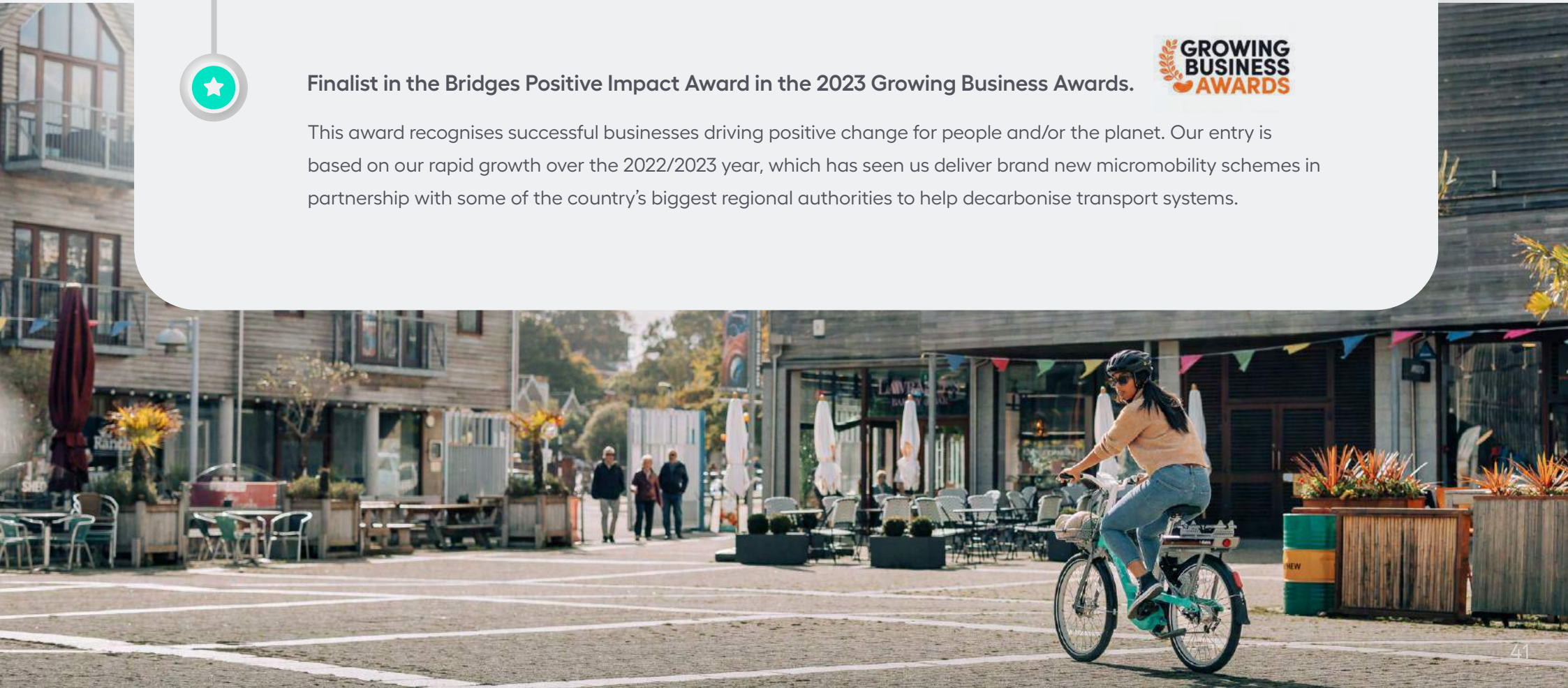
This award is intended to highlight where those councils have gone beyond traditional roles to promote Clean Growth, in line with the Government's ambitions to tackle climate change, deliver Net Zero and address inequalities. Beryl's bike, e-bike and e-scooter share scheme in Norwich was nominated for this award and was commended by judges for its popularity and achievement in breaking down the barriers to sustainable transport for people across the city.



Finalist in the Bridges Positive Impact Award in the 2023 Growing Business Awards.



This award recognises successful businesses driving positive change for people and/or the planet. Our entry is based on our rapid growth over the 2022/2023 year, which has seen us deliver brand new micromobility schemes in partnership with some of the country's biggest regional authorities to help decarbonise transport systems.



Safety and training

As part of ensuring our riders are able to access our vehicles and operate them safely, we provide a range of training opportunities. For all of our training, we partner with The Bikeability Trust to ensure quality is high and consistent.

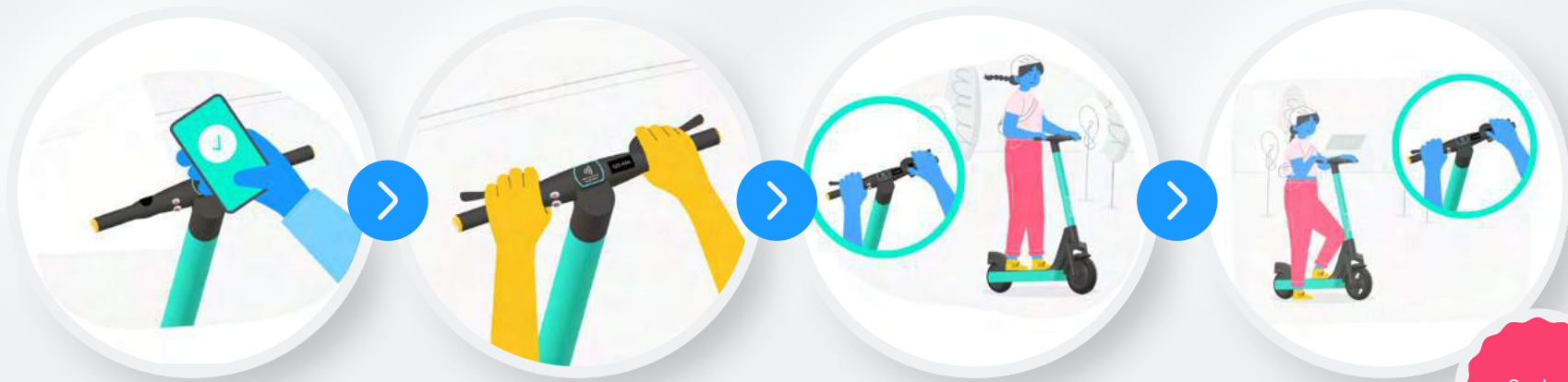


Scoot Happy

Our Scoot Happy training is available to all riders in both digital and in-person formats. Our digital training is incentivised with free minutes for all riders who complete it, with more minutes available for more in-depth training.

Our in-person Scoot Happy sessions are delivered by qualified Bikeability instructors and give riders the chance to have 2 hours of in-depth training on our e-scooters and practice riding on the roads.

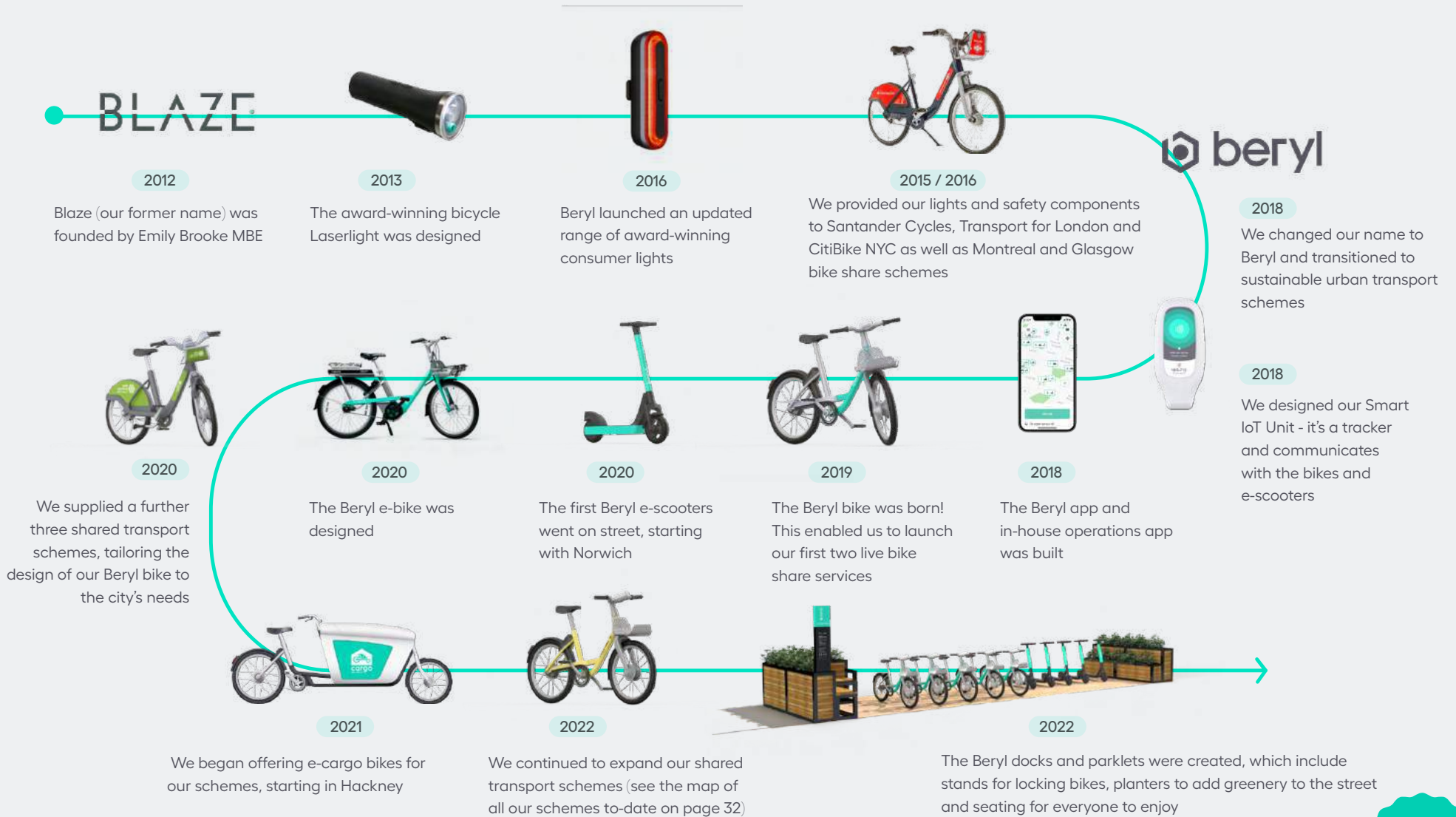
Since its inception in March 2021, we have successfully trained over **350 people** through our Scoot Happy course.





Innovation

Our journey so far



Our bike designs

Our bikes are designed for everyday cycling for people who live, work, study and play in cities. Our dedicated in-house team of designers and engineers review the whole life cycle of the product, carefully taking into consideration the environmental and social impacts.

Durability

Durability is key when it comes to designing bikes that live on the street, exposed to the elements 24/7.

One of the main materials used is the **aluminium alloy 6061**, which is strong, durable and absorbs vibrations delivering a very comfortable riding experience.

Durability



Accessibility

Our design considers people of different body shapes, ages and abilities. This includes:

- ✓ The saddle height adjusts to fit riders from 4'11" to 6'5"
- ✓ Unisex bike design
- ✓ Accommodates riders of over 100kg comfortably
- ✓ Our Lightweight frames and 24" wheel geometry make our bikes easy to manoeuvre, quick to accelerate and fun to ride.
- ✓ Low step-through frame means they are easy to mount and dismount
- ✓ Low maintenance
- ✓ The bikes are designed to be easily maintainable and serviceable
- ✓ We have simplified our gearing systems to three gears, helping riders to cycle around with ease on hilly or flat terrain
- ✓ The battery on the e-bike is swappable by mechanics allowing easy removal without exposing the internal wiring or taking off any other parts.
- ✓ Components and cables are enclosed to reduce damage, but accessible to reduce maintenance time
- ✓ Our e-bikes and pedal bikes share a core of common parts, helping us to simplify servicing

Accessibility





Anti-theft

User-friendly

Anti-theft

- ✓ Our bikes use an integrated custom-engineered rear wheel lock to protect the assets
- ✓ In some schemes, our bikes have a front lock docking system
- ✓ We have digital security and anti-fraud measures to ensure risky riders are flagged early and locked out from our share schemes
- ✓ We have a high level of operational service to recover bikes quickly

User-friendly

- ✓ Contactless tech is used to easily unlock the bike
- ✓ Whether you are new to riding or experienced, our bikes feature a three-speed gearing system
- ✓ The Beryl e-bike motor is configured to provide gentle and smooth assistance as the rider pedals naturally
- ✓ The front rack (basket) can carry up to 10kg and the e-bike has an additional carrier





Safety

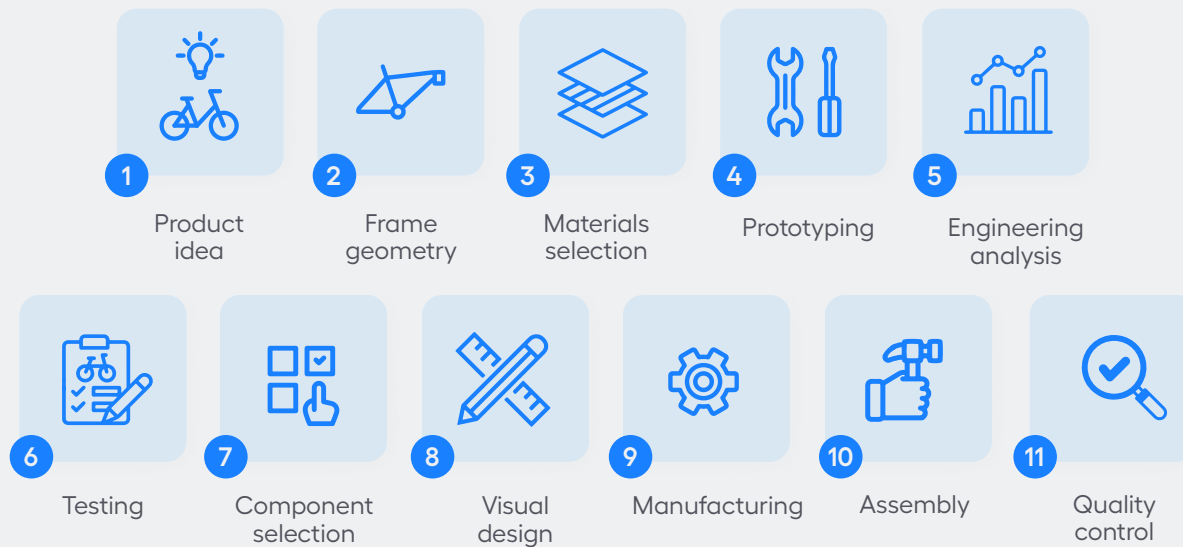
- ✓ Our Laserlight projection technology is used to increase visibility and safety on the roads
- ✓ Front lights are pedal-powered and remain on for 4 minutes after the rider has stopped. All lighting is conformant to ISO standards and RVLK regulations
- ✓ The IoT controller delivers live safety and vehicle status reporting to our central team
- ✓ We use specially designed puncture-resistant tyres to handle street debris such as glass and grit
- ✓ Bike chain covers are used to prevent rider clothes catching, leading to a potential accident



Designing a bike

Our team is continuously making tweaks and improvements to enhance the durability, safety and longevity of the bike design, which is key to delivering further carbon savings and operational cost reductions. Other key aspects, such as the sustainability of materials used and production methods, are being reviewed to reduce negative environmental and social impacts.

The stages of designing a bike





The Future for Innovation

As we continue to expand the number of Beryl schemes across the UK, we are always looking to improve customer safety, service reliability and lower carbon emissions. Here are a few of the latest innovations we are working on...

Social Digital Twin project



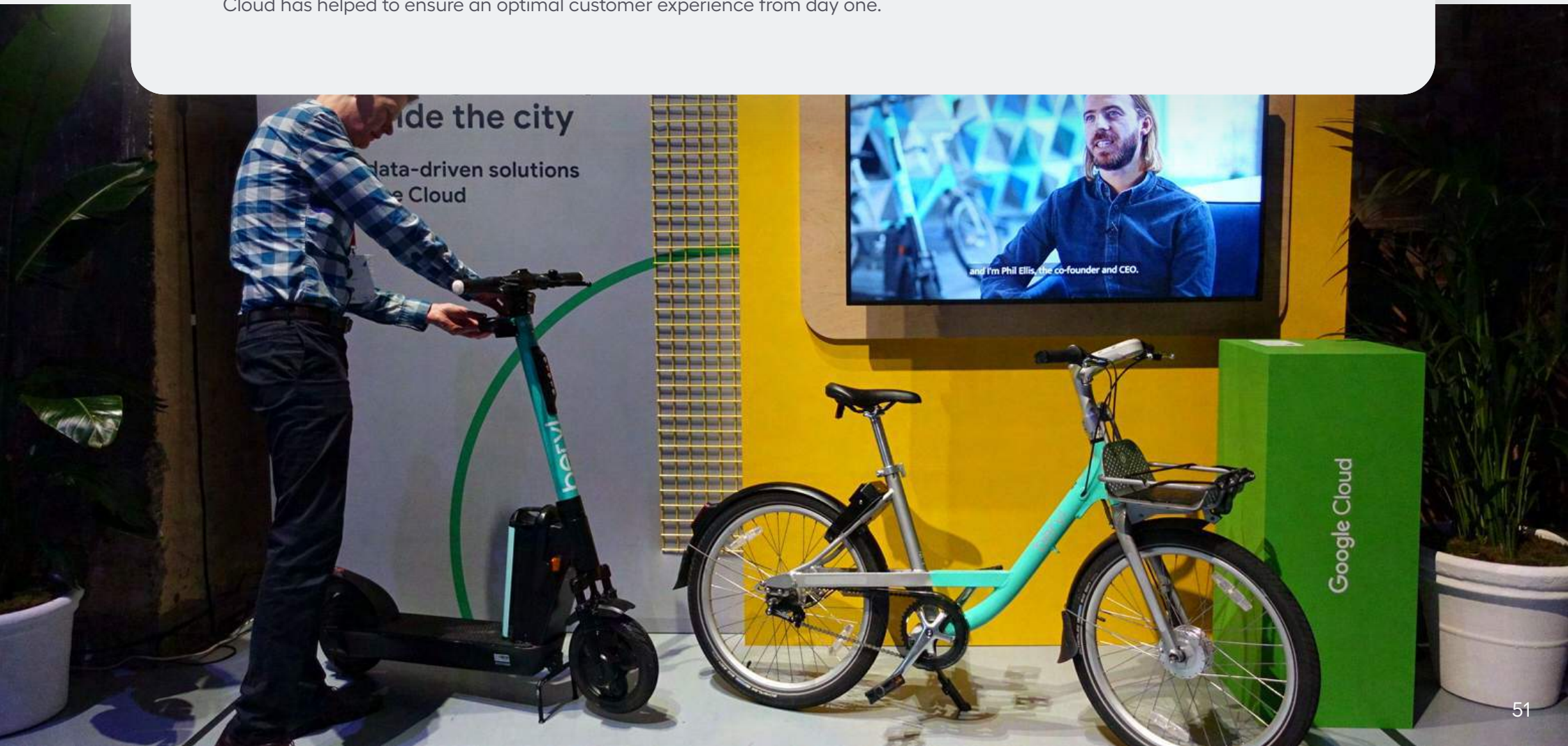
We are working with industry leader Fujitsu to launch an exciting new research project, designed to improve the efficiency and sustainability of shared e-scooter schemes. Our Isle of Wight scheme is being used as the test location. Using digital rehearsal technology known as Social Digital Twin, the project will aim to help the Beryl-operated scheme to increase vehicle availability at the most convenient spots, while reducing carbon emissions and operational costs.

The new technology combines behavioural economics models and AI, allowing for simulations that mirror the behaviour of people in the real world. This enables them to more accurately predict the impact of initiatives on people's transport choices, such as offering discounts for users who return e-scooters to specific bays. It will also be able to more accurately predict how changes to transportation will affect operating costs and contribute towards reducing Beryl's overall carbon footprint. This knowledge will be used to introduce scheme improvements that support our aim of encouraging as many people as possible to take up sustainable transport options. Further details on this project can be found [here](#).

Working with Google Cloud Solutions



As a rapidly expanding shared transport provider, we work with Google Cloud Solutions to ensure that our service reliability remains paramount. For Beryl, this is in the form of a powerful, glitch-free customer-facing app, as well as fully functioning bikes and e-scooters in the right places and at the right times to meet customer demand. A tech stack built from scratch on Google Cloud has helped to ensure an optimal customer experience from day one.



Advanced Vehicle Sensor Safety Analytics Project

We have secured Transport Research and Innovation Grant (TRIG) funding from the government to support the world's first project to deliver accurate data on unreported accidents and near misses on a mass scale. Improving safety concerns (both real and perceived) is the broad challenge that we seek to address.



with 90% of bike and e-scooter accidents likely going unreported, transport and local authorities have an incomplete picture of safety on the roads.

As part of the project, we aim to utilise all the data recorded on our industry-leading smart unit technology and work with firmware engineers to analyse all the sensor data that is available to us. This includes GNSS, accelerometer, IMU, dynamo pulses, motor control and speed sensors. **This data will then be analysed using AI technologies to train models that can recognise a journey that included an accident or near miss.**

By the end of 2023, we will have data for over **50,000** bike, e-bike and e-scooter trips on our platform every day, producing a detailed picture of the real incidents happening on urban streets. This meaningful information will enable transport planners/engineers to make data-led decisions regarding highway and cycling infrastructure improvements, which is a critical factor for rider safety.

Thank you for reading



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