

Affordable access to bikes: re-use & circular business models

October 2021

Executive summary

Access to suitable and affordable bikes is a priority to help more people cycle in Scotland, improving public health and helping us tackle the climate emergency¹. Bike reuse, repair and recycling creates skills and employment opportunities, as well as diverting waste from landfill and it can also generate income for social enterprises.

Enscope were commissioned by Cycling Scotland and partners, Scottish Enterprise and Zero Waste Scotland, to explore bike reuse and circular business models across Europe and Scotland, outlining best practice and potential for growth. Thanks to funding from Transport Scotland, this 2021 research considered three main areas:

- Developing and sustaining affordable access to bikes;
- Skills and employability opportunities in manufacturing, retail and recycling industries; and
- Current bike and component recycling activity and opportunities to engage in the circular economy.

Forty organisations across Europe (including Scotland) were consulted from May to July 2021 to discuss different business/operating models, costs, prices, training, spare parts, the importance of public funding, and a wide range of opportunities and challenges. The final report made recommendations in numerous areas such as:

- Long term financial security for bike reuse and recycling enterprises
- Recording second-hand sales data
- Circular economy collaborations and co-operative models
- Abandoned bike recovery and drop off centres
- Bike maintenance training
- E-bike battery replacement service
- Apprenticeships
- Supply chain spare parts
- Storage

The full report can be read [here](#).

¹ Scotland has over 200 schemes providing access to bikes, including bike libraries, bike share, and bike recycling and reuse programmes. In 2020 Cycling Scotland commissioned an Access to Bikes report, with recommendations on long term funding, setting objectives, collecting data on recycling and on improving access to bikes for specific groups

A research report by Enscope for Cycling Scotland with Zero Waste Scotland and Scottish Enterprise

Cycling Scotland



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Key conclusions

- 1 Social enterprises are important for the delivery of bike re-use, leasing/subscription and bike sharing projects, as well as providing jobs and education.
- 2 Compared to many other European countries, Scotland is manufacturing fewer bikes and bike parts. If Scotland had the same ratio of jobs in bike and/or component manufacturing per capita as the EU or Portugal in particular, we estimate there would be 630–3,600 manufacturing jobs respectively. Currently the number of jobs is likely to be less than 100.
- 3 Scotland relies on increasingly stretched global supply chains for spare parts which may impact on high growth circular business models such as long-term leasing.
- 4 Some Scottish Original Equipment Manufacturers (OEMs) have plans for bike assembly or the assembly of high value components.
- 5 International reuse organisations have a wide-ranging social purpose supported by more secure and long-term grant funding.
- 6 International bike reuse is often part of larger organisation structures such as large repair shops and linked to municipal waste collection systems, making the bike reuse aspect of operations more viable and providing flexibility in how staff and resources are deployed.
- 7 Commercially viable businesses in Scotland involved in bike reuse focus on higher value bikes and components, or in the case of social enterprises, projects form part of a wider operation involving other income streams.
- 8 Many third sector organisations working on bike reuse, as currently structured, are likely to continue to need grant support to provide existing services.
- 9 Company leasing is a significant, new opportunity with the potential to rationalise the use of resources (avoiding waste), with a narrower range of bikes, more common parts, more consistent operating procedures and easier maintenance.
- 10 Collaboration and the development of networks has been identified as a driver of change, awareness raising and capacity building.
- 11 Research suggests significant numbers of bikes are being hoarded. Better information for householders on where to take them and that they will be reused may bring more of these bikes into circulation.
- 12 Many bike businesses/organisations are interested in growing their operations with bike disassembly for spare parts being viewed as lucrative and a way to mitigate against supply chain challenges. The availability and affordability of trained staff to take bikes apart for components and/or rebuild them is a challenge.
- 13 A key opportunity for Scottish businesses is developing the recovered spares model, where these are sold with a warranty. For e-bikes three key parts are the big opportunity – the motor, battery and electronic display as well as the provision of a battery cell replacement service.
- 14 Development of bike mechanic skills (capacity building) with employees, trainees and volunteers is key. Approaches across Europe vary from regional vocational training centres that provide national bike mechanic skills qualifications to on the job training.
- 15 Providing free bikes for children, and discounted costs for adults, could require an estimated level of government support of around £200 per bike. Spread across all bike users in an equitable system this would be significantly lower e.g. £20 per whole-system user if 10% of the population are faced with the affordability challenge. For a children's scheme, involving 10,000–100,000 bikes, the cost of the subsidy could be between £2 million and £20 million per year with a range of social benefits in terms of health and well-being being supported.
- 16 Many Scottish bike businesses have ambitions to grow their operations, for example, between 50% and 100% in terms of the numbers of bikes repaired and resold, as well as providing more focus on the recovery of components for resale, with a warranty and providing services through mobile mechanics.
- 17 Many businesses/organisations are also interested in providing a service through referral organisations, e.g. healthcare providers.

Recommendations

	Recommendation and areas for further work	Strategic fit All underpinned by Climate Change Policy – Net Zero 2045 targets	Suggested delivery partners
Funding and viability	Understand how the viability of Scottish third sector bike reuse organisations can be improved. Investigate how subsidies/support funding should be targeted over the longer term to make the sector more secure. Secure data on levels of bikes sales (new/second-hand) in Scotland to inform how and where to focus future support. Investigate establishing a charter/framework – to formalise collaboration across the sector to increase effectiveness.	Scottish Government Developing Scotland's circular economy – legislation consultation Economic Strategy – Investment, innovation, Inclusive Growth, Internationalisation Transport Scotland Corporate Plan and National Transport Strategy – Taking climate action, helping the economy prosper, health & wellbeing. Active Travel Framework	Transport Scotland Active Travel Framework Partners: Cycling Scotland Active Travel Delivery Partners ACT (UK) – Bike sales data Zero Waste Scotland Circular Communities Scotland
Managing resources more effectively and reducing waste	Raise householder awareness of where to take old bikes for reuse. Explore options to provide the public with greater access to bike maintenance training to encourage long-term use. Improve systems at Household Waste Recycling Centres (HWRCs) to segregate bikes for reuse/recycling. Encourage public organisations to play a role supporting the development of company leasing schemes, running pilots and initiating access schemes. Further work to consider a nationwide scheme for recovering stolen/abandoned bikes. Identify how Scottish businesses can generate maximum value from second-hand e-bike batteries. Consider how the Extended Producer Responsibility regulations could drive more efficient bike reuse market in Scotland.	Scottish Government Developing Scotland's circular economy – legislation consultation Transport Scotland Corporate Plan and National Transport Strategy – Taking climate action, helping the economy prosper, health & wellbeing. Scottish Enterprise Business Plan – Green Jobs, Net Zero Zero Waste Scotland Circular economy policy support and development	Transport Scotland Economic Development Agencies – SE, HIE, SOSE Innovation Centres – National Manufacturing Institute for Scotland, Lightweight Manufacturing Centre, Advanced Forming Research Centre, Michelin Scotland Innovation Park, Mountain Bike Centre of Scotland. Zero Waste Scotland
Training	Understand potential support to develop apprenticeships similar to Dutch regional vocational training centres across Scotland. Identify the potential for expansion of existing initiatives for modern apprenticeships across Scotland. Consider the potential of membership organisations such as Circular Communities Scotland, and initiatives such as Zero Waste Scotland's Revolve programme to support further developments in training.	Scottish Government Programme for Government Green jobs, Low carbon funding.	Skills Development Scotland Zero Waste Scotland – reuse and making things last awareness
Spare parts	Further work to understand how to support the growth of whole bike assembly businesses in Scotland – to create a more rational supply chain for spare parts. Opportunities to be considered to understand how the provision of a battery cell replacement service could be developed and delivered – to maximise benefits to businesses in Scotland and taking into account recent research in this area e.g. as undertaken by Zero Waste Scotland.	Scottish Government Developing Scotland's circular economy – legislation consultation Economic Strategy – Investment, innovation, Inclusive Growth, Internationalisation Making Scotland's Future – a manufacturing recovery plan. Scottish Enterprise Business Plan – Green Jobs, Net Zero, Place Zero Waste Scotland Circular economy policy support and development	Economic Development Agencies – SE, HIE, SOSE Innovation Centres – National Manufacturing Institute for Scotland, Lightweight Manufacturing Centre, Advanced Forming Research Centre, Michelin Scotland Innovation Park, Mountain Bike Centre of Scotland. Zero Waste Scotland Skills Development Scotland Co-operative Development Scotland

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Delivering affordable options	Further work required to develop a cost model for a subsidised system that makes bikes available free of charge to children – to include leasing as this supports circular economy objectives.	Transport Scotland Corporate Plan and National Transport Strategy – Taking climate action, helping the economy prosper, health & wellbeing. Active Travel Framework	Cycling Scotland Other organisations: Sustrans, Forth Environment Link, Angus Cycle Hub, Scottish Cycling, Bike for Good, St Paul's Youth Forum
Supporting growth	Economic development agencies should consider the potential to support businesses to develop circular business models, increasing the number of people buying and leasing bikes. The potential to create a “national network” of places where people can drop off their bikes for reuse should be explored, to include HWRCs with separate containers. Consider how better collaboration could create opportunities for third sector organisations including shared space for storage, selling etc. Develop case studies, including podcasts, videos etc of successful bike reuse models to encourage more similar schemes in Scotland.	Scottish Government Developing Scotland's circular economy – legislation consultation Economic Strategy – Investment, innovation, Inclusive Growth, Internationalisation Zero Waste Scotland Circular economy policy support and development. Circular Communities Scotland Membership organisation committed to delivering a circular economy in Scotland.	Zero Waste Scotland Circular Communities Scotland Economic Development Agencies – SE, HIE, SOSE Cooperative Development Scotland
Company leasing schemes	Consider supporting company leasing schemes in Scotland through support to businesses – to promote cycling to/from work.	Transport Scotland Corporate Plan and National Transport Strategy – Taking climate action, helping the economy prosper, health & wellbeing. Zero Waste Scotland Circular economy policy support and development – includes leasing as a delivery mechanism	Cycling Scotland Zero Waste Scotland
Collaboration	Understand more about collaborative, co-operative membership models (e.g. L'Heureux Cyclage, France) with the aim of developing a Scottish bike reuse co-operative organisation. Determine how many HWRCs have bike donation containers and understand potential for improved practices – to enable local social enterprises and other businesses to work collaboratively with local authorities for maximum reuse value. Investigate the potential of the Zero Waste Scotland local authority recycling fund (£70m) to support future collaborations of local authorities, social enterprises or other business to work together to extract maximum reuse value from unwanted bikes.	Transport Scotland Social enterprise: action plan . Long-term vision of social enterprise at the forefront of a new wave of ethical and socially responsible business in Scotland. Zero Waste Scotland Circular economy policy support and development Local Authorities (32 across Scotland) Duty to provide recycling infrastructure and to collaborate with social enterprises. Circular Communities Scotland Membership organisation committed to delivering a circular economy	New, single intermediary body (to be formed) An action from the Social enterprise: action plan Zero Waste Scotland Local Authorities Circular Communities Scotland

Next steps and priorities

Following up this report, the immediate next steps being taken are:

- Cycling Scotland: work with partners and bike recycling social enterprises to review report findings and identify clear actions that will maximise support to further enable affordable access to bikes.
- Cycling Scotland, Zero Waste Scotland and Scottish Enterprise to present findings to the range of key strategic agencies named in the report to consider findings and recommendations.