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Decarbonising the retail sector

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Decarbonising the retail sector

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Glossary

SME

Small and medium enterprise

BRC

British Retail Consortium

HVAC

Heating, Ventilation, and Air Conditioning

1. Introduction and background

1.1. Importance of the Welsh retail sector

As described in the Shared Strategic Vision for the Retail Sector, the retail sector is an important part of the Welsh economy, delivering economic growth and job opportunities. It is highly diverse, ranging from large international chains to local independent shops. As highlighted in the 2023 Retail Forum Action Plan, it is also one of the largest private sector employers in Wales, forms a significant part of the tax base – generating approximately a quarter of Non-Domestic Rates in 2023 – and contributes about 6% of Wales's GVA. Beyond its economic contribution, the British Retail Consortium contends that the sector also plays an important role in strengthening our communities, providing opportunities for social interaction and essential services.

At the same time, the retail sector is also associated with significant greenhouse gas emissions. Across the United Kingdom, including Wales, retail-related activities contribute substantially to carbon emissions. The British Retail Consortium's Climate Action Roadmap, developed in partnership with 20 leading retailers to describe how the retail industry in Britain can decarbonise, estimates that the sector in the UK is responsible for around 215 million tonnes of carbon dioxide equivalent per year. Additionally, as described in the Shared Strategic Vision for the Retail Sector, the sector has been facing growing and complex challenges and uncertainty, including shifts in consumer behaviours, the impact of new technologies, pressures on employment conditions, changing roles for town centres, and ongoing supply chain and workforce recruitment and retention issues.

Reducing the carbon footprint of the retail sector is important not only for addressing climate change but also for supporting energy efficiency, cost savings, and the transition to a low-carbon economy. These challenges create both risks and opportunities as the sector adapts to wider economic and environmental transitions.

1.2. Policy context for decarbonisation in Wales

In recognition of the sector's economic and social importance during the coronavirus pandemic, Welsh Ministers under the previous administration in 2021 established the Retail Forum ('the Forum') with the aim of creating a more collaborative approach with business, employer and worker representatives. The Forum was created to support the sector not only through the challenges of the pandemic, but to instil a long-term "shared vision for a successful, sustainable and resilient retail sector that offers fair, secure and rewarding work". It operates as a tripartite group, facilitating dialogue between the Welsh Government, trade unions, and employer representatives.

Building on this approach, the Retail Forum published its 2022 policy strategy, A Shared Strategic Vision for the Retail Sector, which aimed to create a "successful, innovative, sustainable, and resilient retail sector." This vision outlined four major challenges facing the sector: (i) recovering from the impact of the coronavirus pandemic; (ii) addressing the

demands of climate change and the transition to net zero; (iii) responding to the cost-of-living crisis; and (iv) adapting to the post-Brexit landscape.

In 2023, the Retail Forum published its Retail Action Plan, which provided details on the actions needed to deliver the Vision. In the Action Plan, the Retail Forum outlined its anticipated outcomes for a decarbonised retail sector, which include:

- retail sector moves at pace towards achieving net zero, with more than 50% of premises in Wales at net zero before 2030
- retail supply chains are ethical and responsible, and where possible, shortened to reduce the sector's global footprint

1.3. Role of Business Wales in delivering decarbonisation

The Welsh Government delivers practical support to small and medium enterprises (SMEs) through its Business Wales advice and support service. Among other activities, Business Wales can advise SME retailers to understand their net zero requirements, identify cost-effective measures, access funding, and help develop the skills needed to transition to more sustainable business models.

Under the previous administration, Business Wales introduced the Green Growth Pledge, which supports businesses to take practical steps to improve their sustainability. This involves signing a pledge and committing to one or more actions to reduce carbon emissions and environmental impact. As such, Business Wales has served as an important delivery mechanism for the ambitions set out in the Action Plan. Business Wales also delivers targeted programmes, such as the Accelerated Growth Programme, which provides intensive support to high-growth and scaling SMEs.

1.4. Current decarbonisation actions undertaken by retailers in Wales

The Welsh Government's Retail Action Plan, published in 2023 under the previous administration, set out priorities to support the decarbonisation of the retail sector. Two actions are particularly relevant to this report:

1. explore options to support small business premises to utilise renewables and decarbonisation initiatives
2. develop resources to raise awareness of renewables and decarbonisation initiatives, including considering a green street project in Wales and a retail park energy generation pilot

These actions were designed to address a core challenge, highlighted in an article by the Conservative Environment Network: while larger retailers often have the financial capacity and internal expertise to decarbonise, smaller businesses, despite their strong community presence, face significant barriers to taking similar action. This includes limited access to information, capital, and technical support.

Larger retailers operating in Wales have already taken more advanced steps toward decarbonisation. These examples provide valuable insights into scalable initiatives that could potentially be adapted for use by smaller retailers with appropriate support. Specific examples include:

- Greggs partnered with the Baker's Food and Allied Workers Union (BFAWU) to deliver staff training, embedding environmental awareness across operations
    - through a pilot scheme, health and safety representatives also took on environmental responsibilities, supported by tailored training
    - topics include reducing the company's carbon footprint, energy monitoring, waste management, and water use
    - a practical example includes delaying dishwasher start-up times, a small operational shift that, across 1,700+ shops, could lead to substantial energy savings
- Asda reduced its carbon impact by approximately 175,000 tonnes through bio-gas trucks and is transitioning over 3,000 home delivery vans from diesel to electric by 2028, supported by EV charging infrastructure at stores
- Boots launched the Recycle at Boots initiative, now active in over 30 stores in Wales
    - the scheme enables customers to return hard-to-recycle packaging and rewards them with loyalty points
    - over 20 tonnes of packaging have been prevented from landfills, and 45,000 users have participated, collecting over one million items since launch

1.5. Purpose of this report

Against this background, the previous Welsh Government commissioned Alma Economics to undertake research into decarbonisation initiatives currently being adopted by small retailers in Wales.

The project intended to contribute to the delivery of the following action identified in the Retail Action Plan: explore options to support small business premises to utilise renewables and adopt decarbonisation initiatives.

In pursuit of this end, the Welsh Government asked Alma Economics to produce a report that collates a range of decarbonisation initiatives retailers in Wales are implementing in-store and online, as well as separate case study example materials illustrating initiatives by organisations that are excelling in this space. The core research question both reports and case studies are seeking to address is:

- what decarbonisation initiatives are currently being undertaken by both large and small retailers in Wales, which could feasibly be adopted by smaller retailers?

- This report contains the following sections:
- chapter 2 sets out the methodological approach for the research, including the design of the Call for Evidence, the interviews conducted, the desk-based review, and the limitations of the study
- chapter 3 presents the findings, synthesising evidence from the desk-based review with insights from small retailers gathered through interviews and the Call for Evidence
    - it examines the initiatives adopted, alongside motivations, enabling factors, and barriers
- chapter 4 summarises the important conclusions emerging from the research, reflecting on the landscape of decarbonisation initiatives implemented by small retailers in Wales

2. Methodology

The research adopted a mixed-methods approach that included a review of existing literature and evidence, a Call for Evidence survey issued to retailers, and in-depth interviews with retailers to capture practical experiences and develop 8 case studies. Data collection ran from November 2025 to February 2026.

2.1. Scoping activities

To initiate the project, the research team carried out scoping activities to deepen their understanding of the policy area. They familiarised themselves with important relevant policy documents published and legislation enacted under previous administrations, including:

- A shared strategic vision for the retail sector
- The Retail Forum action plan
- Wellbeing of Future Generations Act 2015
- Green Growth Pledge
- Beyond Recycling Strategy

Two semi-structured scoping interviews were also conducted with a representative from the Welsh Government and from the Retail Forum, respectively. The Welsh Government representative was selected as they are the lead for retail policy within the Welsh Government, and the Retail Forum representative was proposed by the Welsh Government retail policy lead as having a particular knowledge of and interest in the research area.

The scoping interviews were exploratory and semi-structured in nature. They were intended to provide a strategic perspective on the core research question, to help inform the development of research materials and guide the evidence review.

Specific themes covered in the scoping interviews include existing decarbonisation initiatives, efforts the Welsh Government has made to support small businesses, and wider policy objectives in Wales.

In addition to informing the development of research materials and guiding the evidence review, qualitative insights from the scoping interviews were thematically analysed, and important findings are integrated into the body of the report.

2.2. Identification of decarbonisation initiatives

Next, the research team engaged in both primary and secondary data collection. The approach combined an evidence review, a Call for Evidence survey, and semi-structured interviews with retailers.

2.2.1. Evidence review

The research team conducted a targeted desk-based review to identify existing evidence on decarbonisation initiatives implemented by small retailers in Wales. The purpose of the review was to understand the types of initiatives already being adopted, the scale at which they are implemented, and the extent to which these initiatives are documented in publicly available sources.

Sources were identified through a structured search approach. This involved: (i) targeted keyword searches (e.g., decarbonisation, net zero, small business sustainability, and retail) on relevant websites, including that of the Welsh Government and Business Wales; (ii) focused searches of relevant local authority, industry body, and third sector organisation websites; and (iii) an iterative process whereby, once relevant policies, programmes, or initiatives were identified, additional searches were conducted of associated organisations to identify further material. The review primarily focused on Wales, with some broader UK evidence considered when relevant.

A set of indicative inclusion and exclusion criteria was applied to guide the selection of sources. These included: (i) relevance to decarbonisation initiatives implemented by small business in the retail sector; (ii) a geographic focus on Wales (or, where necessary, the wider UK); (iii) publication types including policy documents, evaluation reports, academic literature, and grey literature (such as organisational reports, press releases, and sector publications); and (iv) publication date (with a focus on evidence produced from 2015 onwards).

The desk-based review was deliberately targeted rather than systematic. It focused on identifying relevant policy documents, programme materials, and examples of retailer activity to inform the research design and contextualise primary data collection. It did not follow a structured search protocol or quality appraisal process, such as those used in a rapid evidence assessment. As a result, while the review provides useful contextual grounding, it should not be interpreted as a comprehensive or exhaustive synthesis of the available evidence.

2.2.2. Call for Evidence

A Call for Evidence was issued to capture additional insights directly from businesses, recognising that not all decarbonisation initiatives undertaken by retailers are publicly documented. The intended audience was small retailers in Wales.

Respondents were invited to provide information on up to 3 initiatives implemented within their organisations, including the rationale for adoption, intended objectives, expected or realised impacts, challenges and barriers encountered, and the potential for replication by other retailers. The Call for Evidence also served as a recruitment tool for the case studies, with respondents invited to indicate whether they would be willing to take part in a follow-up interview, with a view to developing their initiative into a detailed case study.

The Call for Evidence was hosted on the SmartSurvey platform and issued jointly by Alma Economics and the Welsh Government. It was disseminated through multiple channels to maximise reach, including:

- circulation to members of the Retail Forum and business improvement districts, with a request that they share it with their members and promote it via their websites and networks
    - the Welsh Government also promoted the Call for Evidence during a Retail Forum meeting
- distribution directly to retailers identified through a mapping exercise of small retailers across Wales
    - this exercise focused on independent and small chain retailers, with coverage spanning urban, rural, and coastal locations across north, mid, and south Wales
    - retailers were identified using publicly available business directories, local authority listings, and online searches, with contact details gathered from business websites and publicly listed email addresses, where available
- Business Wales promoted the Call for Evidence on its website, circulated it to retailers within its network, and shared contact details for 320 businesses that had signed the Green Growth Pledge, which were then contacted to complete the survey
- research participants were encouraged to share the invitation more widely with colleagues and sector contacts

A total of 9 responses were received from retailers across a range of sectors. Participants identified several relevant initiatives, and they were asked for permission to reference their submissions in the report.

The Call for Evidence was analysed using a mixed-methods approach. Quantitative survey data were analysed to summarise the types and prevalence of initiatives and respondent characteristics. Qualitative responses were analysed thematically to identify common motivations, impacts, barriers, and support needs. These findings were then brought together to explore differences in the scale and feasibility of initiatives, and to highlight recurring patterns, examples of effective practice, and gaps in existing support.

The Call for Evidence was disseminated during the peak retail period in November and December, which contributed to an initially low response rate. To address this, the Call for Evidence period was extended by approximately 2 months. This allowed the Welsh Government to promote the Call for Evidence to members of the Retail Forum in January 2026, which resulted in an increased number of responses and secured additional interviews.

2.2.3. Interviews with retailers

Semi-structured interviews with retailers formed the core component of the primary data collection, enabling in-depth exploration of decarbonisation initiatives identified.

Interview participants were recruited through 2 main channels:

- respondents to the Call for Evidence were invited to indicate whether they were willing to take part in a follow-up interview
    - nine businesses were invited via this route, and 4 interviews were completed
- retailers were recruited through Business Wales networks, drawing on contacts with businesses that had engaged with sustainability support
    - 320 businesses were invited via this route, and 4 interviews were completed

In total, 8 interviews were conducted with small retailers across Wales. There was no sample framework as the project was designed to be illustrative rather than representative. All small retailer respondents to the Call for Evidence were invited to take part in an interview, and all retailers' contact details provided by Business Wales were invited.

A privacy notice covering all primary data collection activity was hosted in Welsh and English on the Alma Economics website.

Interviews were guided by a topic guide covering the full lifecycle of decarbonisation initiatives. Topics included:

- motivations for adoption
- planning and decision-making processes
- implementation and delivery
- funding and resources
- challenges and barriers
- success factors
- impacts and outcomes
- perspectives on replicability and scalability

The interview findings were analysed thematically, following Braun and Clarke's (2006) systematic framework for thematic analysis of qualitative data. This approach enabled the identification of common themes, variations in stakeholder perspectives, and areas of convergence or divergence across sectors. This analysis forms the basis of the findings presented in Chapter 3.

2.3. Case study development

The research team developed the semi-structured interviews with retailers into 8 case studies, which can be found in the Decarbonising the Retail Sector: Case Studies document, each highlighting a specific decarbonisation initiative implemented by a small business in Wales.

They were designed to provide accessible, practice-based examples for other retailers, promoting decarbonisation measures that are both practical and feasible for small retailers.

The case studies explore the practical steps taken, the challenges and barriers encountered, and the types of support accessed during implementation. Each case study has been developed in a visually engaging format (see the Decarbonising the Retail Sector: Case Studies document) to support effective dissemination across the sector.

2.4. Analysis and reporting

The findings from all research strands were brought together using a structured qualitative analysis approach. The BRC Climate Action Roadmap was used as a guiding framework to organise and categorise the types of decarbonisation initiatives identified. Analysis was primarily structured according to the topics found in the interview discussion guide and refined through emerging interview insights, with findings from the evidence review, Call for Evidence, and scoping interviews integrated to support, validate, and strengthen the overall findings.

2.5. Respondent characteristics

The 13 retailers engaged in the research through the Call for Evidence and the semi-structured interviews represent a diverse range of retail businesses operating across Wales. Most were independent retailers running a single shop, with only a minority comprising large chains (10+ shops or franchise retailers), e-commerce/online-only retailers, and wholesalers operating UK-wide.

In terms of sectoral representation, 4 businesses operated in fashion and apparel, 2 in the automotive sector (vehicles, parts, fuel, accessories), followed by 4 retailers distributed in leisure, culture, and speciality retail (e.g., books, hobbies, gifts, pets); in food and grocery; health, beauty and pharmacy; and wholesale giftware.

Geographically, many business respondents were based in mid Wales, with others distributed across southeast, southwest, and north Wales. A minority operated UK-wide while maintaining a presence in Wales.

2.6. Decarbonisation initiative characteristics

The research team identified a total of 18 decarbonisation initiatives, which form the basis of the analysis that follows. Of these, 7 were identified in the semi-structured interviews, and 11 through the Call for Evidence.

Of these 18 initiatives shared by retailers during the stakeholder engagement, most initiatives started 1 to 3 years ago. A minority began more than 3 years ago, while very few were initiated within the past year, indicating that nearly all initiatives discussed here are relatively established.

The BRC Climate Action Roadmap has been used as a guiding framework to categorise the types of decarbonisation initiatives undertaken by the businesses engaged during this study. The Climate Action Roadmap identifies 5 key decarbonisation pathways: embedding emissions data into decision-making, reducing emissions from retail sites, developing low-carbon logistics, sourcing sustainable materials, and promoting low-carbon behaviours among employees and customers. Using this typology, the initiatives have been grouped as follows:

Table 1: Decarbonisation initiatives identified

Pathway	Number of initiatives	Name of initiative
Embedding emissions data into decision-making	1	Building management system controls
Reducing emissions from retail sites	5	Renewable energy: Installation of Photovoltaic (PV) solar panels Solar array and battery LED lighting HVAC installation Low-carbon air system
Developing low-carbon logistics	2	Circular suppliers Electric vehicle for deliveries
Sourcing sustainable materials	3	Natural dye and recycled textiles Packaging reuse
Promoting low-carbon behaviours among employees and customers	7	Blister pack recycling Mend and repair shop Instrument service maintenance Upcycle fashion Pre-loved products Clothing and accessory rental Hiring local staff to reduce commute

Source: Primary and secondary data collected during this research

2.7. Methodological limitations

While the research provides valuable insights into the range and nature of decarbonisation initiatives implemented by small retailers, it does not aim to provide a comprehensive or representative assessment of all initiatives operating across Wales. This was outside the scope of the project remit, which focused on identifying illustrative and transferable examples rather than mapping the full landscape. Therefore, this study provides a snapshot of the decarbonisation initiatives undertaken by small retailers across Wales.

3. Findings

This section follows the structure of the interview topic guide – starting by examining how these initiatives were planned, developed, and delivered, before discussing the important challenges and barriers encountered, the factors contributing to success, the funding sources, and the resulting impacts and outcomes of the initiatives.

3.1. Motivations for developing initiatives

Decisions around decarbonisation initiatives were typically aligned with business values and incorporated pragmatic goals around cost control, efficiency, and resilience.

Initiatives were not typically driven by regulation, incentives or formal governance triggers. In describing how initiatives were selected, participants noted that decisions were rarely prompted by a single governance or operational trigger. Most retailers reported their initiatives aligned with organisational goals or values and were driven by a collective interest within businesses. A minority indicated that it was a top-down decision from leadership or that the initiative resulted from staff or team suggestions. Few businesses stated that the initiative responded to customer or community demand, and very few reported that it was influenced by external incentives or funding.

All businesses said that they were trying to operate in a streamlined, cost-efficient, and net-zero-aligned manner. Many businesses had started by implementing energy efficiency measures and described progressing incrementally, often framing sustainability as part of a wider strategic approach to improving business operations and performance.

This reflects the wider policy context at the time the research was conducted, under the previous administration. As noted by one stakeholder, “decarbonisation policy in the retail sector seeks to balance environmental responsibility with economic pragmatism.” Rising energy and fuel costs have reinforced this alignment and encouraged businesses to adopt measures that both reduce emissions and lower operating expenses, as highlighted in the Welsh Government’s Business Decarbonisation Brochure. In this context, for the retailers participating in the study, decarbonisation was viewed not only as a contribution to net zero ambitions but also as a means to enhance business efficiency, competitiveness, and resilience in a context of rising costs and economic uncertainty.

3.2. Delivery and implementation

Retailers reported that implementation was generally incremental and pragmatic. Several retailers reported that implementing renewable energy projects, such as solar panel installation, can take around a year. This timescale includes defining the project, seeking expert guidance, securing funding, meeting legal and regulatory requirements, and finally, the installation. These businesses mentioned that they typically delivered and implemented their decarbonisation initiatives through a phased and practical approach that combined planning, technical advice, and operational execution. Other businesses, particularly those undertaking small-scale infrastructure upgrades, such as air system replacements, reported that these changes tend to be quicker. For example, one business noted that their project was completed within 2 weeks and was scheduled during summer months, rather than winter, to minimise disruption to operations.

However, many initiatives become embedded in the business model and integrated into daily routines and operations. For example, some participant businesses that recycle packaging systematically said that they clean, fold, and store boxes, plastics, and Styrofoam for future reuse in their own packaging. Others, particularly fashion and pre-loved product retailers, noted they are continually searching for recycled fabrics, surplus garments, and second-hand items that can be given a second life. For all participant retailers, sustainability implementation was not a one-off initiative but an ongoing, integrated process within their day-to-day operations.

Most small retailers noted that they often rely on their own experience and practical knowledge when delivering initiatives. Skills such as budget management, supplier sourcing, and operational planning help ensure that sustainability projects remain cost-effective.

Businesses reported that implementation tends to be supported by their own market research and planning before committing to investments, allowing them to understand their customers' needs, identify suitable suppliers, and secure essential operational requirements, such as lighting or equipment. Additionally, retailers mentioned that social media plays an important role in helping them communicate some of their initiatives, share sustainability achievements, and reinforce their brand positioning as environmentally responsible choices for customers.

3.3. Funding and resources

Businesses reported financing their decarbonisation initiatives through a combination of internal investment, loans, small grants, and community-based income streams. Several businesses reported self-financing upgrades and maintenance of energy efficiency improvements and renewable energy installations. For many of them, the ongoing operational costs associated with sustainability initiatives were relatively low, reflecting a tendency to prioritise measures with manageable upfront investment and clear medium to long-term financial benefits, such as lower energy bills, income from energy generation, or avoided costs such as reduced product losses. Packaging, pre-loved, and recycling strategies were largely cost-neutral. Some community-based recycling schemes operated on donations, including customer contributions and the resale of donated items, allowing the service to remain free to users.

Research from the Federation of Small Business (FSB) suggests that access to funding, such as grants and loans, play an important role in supporting SMEs to implement decarbonisation initiatives. Limited financial resources can constrain businesses' ability to invest in low-carbon technologies or adopt sustainable practices, highlighting the need for targeted financial support to achieve broader decarbonisation objectives in the UK.

The interviews provide supporting evidence for the important role that access to finance can play. For instance, one retailer secured a loan from the Development Bank of Wales to install solar panels, using income generated from exporting surplus electricity back to the grid to help repay the loan. In other cases, businesses reported receiving grants from their local council to support general business activity or used government support schemes, such as the Universal Credit start-up programme.

3.4. Challenges and barriers

As outlined above, businesses can have a range of motivations to implement sustainability initiatives, but the research identified five issues that can influence their progress: access to expertise, supplier reliability, regulatory processes, operational capacity, and financial limitations.

3.4.1. Access to knowledge and technical support

Although awareness of climate change is increasing, many SMEs continue to face informational barriers to decarbonisation. Most businesses reported confusion arising from the range of available tools, standards, and methodologies, alongside uncertainty regarding the costs, benefits, and payback periods associated with low-carbon technologies. For the businesses engaged in the research, there was also a perceived lack of clear, sector-specific guidance tailored to the retail context and limited access to practical support for carbon measurement and reporting. This is consistent with evidence reported in a recent study conducted for Imperial College London, which found that most SMEs in the UK are not fully aware of their own carbon footprint and encounter difficulties accessing reliable data on operational and supply chain emissions.

In addition, some participant retailers reported that limited knowledge, expertise, or technical skills also served as barriers in initiatives involving renewable energy transition or energy efficiency improvements, as these often require specialist advice and technical support. These businesses reported difficulty identifying the most appropriate course of action, particularly given the range of emerging technologies available (e.g., heat pumps and alternative energy systems). The time and resource required to research options, compare technologies, and assess suitability were also cited as constraints. While these participants acknowledged that seeking expert guidance can slow implementation in the short term, they emphasised that it increases the likelihood of achieving sustainable, cost-effective outcomes over the longer term.

3.4.2. Supply chain, suppliers, and partners constraints

Businesses that participated in the research identified supplier and partner constraints as a significant challenge to their decarbonisation efforts, particularly when attempting to source genuinely sustainable products. Most retailers described difficulties in verifying environmental claims and ensuring that products met expected sustainability standards. This is consistent with findings from a report by Ricardo Energy & Environment, which highlights supply chains as an important area of vulnerability for SMEs. The report notes that many small businesses rely on a limited number of suppliers, increasing their exposure to risks such as material shortages, transport disruptions, price volatility, and wider economic or geopolitical shocks. This reliance can also constrain their ability to identify and switch to more sustainable sourcing options.

Participants also raised concerns about greenwashing, noting that some suppliers make environmental claims without providing clear or verifiable evidence. Limited supply chain management capacity can exacerbate this issue. As mentioned in the Ricardo Energy & Environment report, many SMEs lack the systems, data access, and internal expertise required to monitor supplier performance, diversify sourcing arrangements, or measure emissions across supply networks. This is particularly relevant in the context of

decarbonisation, where SMEs are expected to transition towards low-carbon supply chains but often lack the technical expertise, data access, and operational capacity to do so effectively.

In response, some businesses that participated in the research adopted more stringent supplier selection processes. This included prioritising transparency, requesting detailed information about production methods, internal processes, chemical use, and ethical standards, and favouring suppliers able to provide credible evidence. Where such information was not available, some businesses chose not to proceed with those partnerships, even where this limited their sourcing options.

3.4.3. Regulatory and administrative

Regulatory and administrative barriers were identified as obstacles to the planning, investment, implementation, and delivery of decarbonisation initiatives. In some cases, regulatory complexity and administrative processes delayed project timelines. For example, one retailer reported that delays in securing premises prevented them from meeting eligibility requirements for grant funding. Unexpected regulatory costs were also highlighted as a challenge. For instance, the introduction of taxation on electric commercial vehicles increased operational expenses for some businesses, despite the environmental benefits of transitioning to electric fleets. This illustrates how changes in the regulatory landscape can affect the financial viability and perceived benefits of low-carbon investments.

3.4.4. Time and staff capacity constraints

Time and staff capacity constraints were most frequently reported by businesses that design and produce their own products. These retailers explained that product development, marketing, sustainability initiatives, and day-to-day operational management all require significant time, technical knowledge, and specialist skills. In small businesses, where employees often undertake multiple roles, managing these competing demands simultaneously can be particularly challenging when trying to implement decarbonisation initiatives.

Similarly, the report for Imperial College London contends that most UK SMEs employ very small workforces, meaning responsibility for sustainability is typically absorbed into existing roles rather than assigned to dedicated staff. As a result, businesses tend to prioritise core operational activities that directly generate revenue, with decarbonisation actions competing for limited time and capacity.

Although many participant retailers reported accessing external support, including advice from Business Wales, they emphasised that balancing production, marketing, growth ambitions, and sustainability efforts remains demanding. Maintaining product quality and operational efficiency while advancing decarbonisation objectives was described as an ongoing challenge, particularly in the context of limited internal resources.

3.4.5. Funding and financial resources

Availability of financial resources can influence businesses' ability to engage in decarbonisation activities – and respondent businesses identified limited funding and financial capacity as important barriers, particularly for those seeking to invest in energy efficiency measures or in the early stages of their decarbonisation journey. As discussed in

the report for Imperial College London, SMEs often operate on tight profit margins, face high upfront costs for low-carbon technologies, and are reluctant to borrow for investment due to high capital costs and economic uncertainty. Even where initiatives are expected to generate efficiency savings over time, uncertainty around payback periods and future trading conditions can delay investment decisions. The report further contends that in recent years, rising operational costs and volatile market conditions have further constrained the ability of businesses to commit to longer-term investments with uncertain returns.

As a result, initiatives requiring substantial upfront expenditure can be difficult to progress. Many participant businesses sought to mitigate this by exploring alternative funding routes, including loans, grants, and customer contributions to generate initial capital. For example, in contrast to retailers that ask for loans, a retailer reported financing an energy efficiency upgrade through internal funds, viewing the expenditure as a strategic, long-term cost-saving investment. This suggests that although financial constraints exist, businesses may overcome them through a combination of external financing and internal investment decisions.

3.5. Success factors

The research identified several success factors that enable businesses to implement decarbonisation initiatives and progress in reducing their carbon footprint. These include external support, particularly from Business Wales, as well as internal factors, such as premises characteristics, community engagement, operational practices, and the development of internal environmental policies.

3.5.1. Support received

Most retailers expressed that support structures – such as advisory services and accessible guidance, particularly those provided by Business Wales and, in some cases, specific programmes like the Green Growth Pledge – were very influential in shaping planning and development.

Advisory services and accessible guidance were seen as important enablers in helping businesses plan and progress their sustainability efforts. Although none of the participating businesses indicated that their initiatives had been directly driven or mandated by regulation or policy, all emphasised the importance of understanding regulatory changes that might affect them and what those changes would mean in practice for their operations.

As would be expected given the use of Business Wales contacts and networks for participant recruitment, several businesses reported that they were aware of, and had made use of, the Business Wales service.

Engagement with specific Business Wales programmes was also evident. Some retailers reported awareness of, and participation in, the Green Growth Pledge, describing it as one of the most effective forms of support available, and noting that it helps businesses identify practical steps to reduce their carbon footprint and improve operational efficiency. A few retailers highlighted that participation in the Accelerated Growth Programme (Business Wales) supported the development of their decarbonisation and wider sustainability strategy.

Small retailers also mentioned receiving ongoing support from Business Wales advisers, with whom they meet periodically to discuss business concerns, explore opportunities, and consider decarbonisation options. Other businesses reported accessing Business Wales services more broadly, including attending webinars, training sessions, and information events covering both general business development and environmental topics.

Importantly, participating businesses noted that, once they identified the actions they wished to pursue, whether independently or with external support, they typically undertook further analysis before implementation. This included financial planning, assessment of regulatory compliance requirements, and evaluation of their premises, customer base, or supply chains to ensure the feasibility and effectiveness of the proposed measures.

3.5.2. Additional success factors

Several operational and strategic factors have contributed to the successful implementation of some decarbonisation initiatives. In relation to energy efficiency and renewable energy, the physical characteristics of premises were identified by research participants as important enablers. Single-storey, open-plan layouts can make upgrades to heating and ventilation systems more straightforward and cost-effective, while certain building types are more suitable for the installation of solar panels. Businesses in the study that reported implementing these types of initiatives also emphasised that long-term success depends not only on installation, but on ongoing management and maintenance. For example, in the case of one of the interviewed businesses, Something Different Wholesale Ltd., a formal maintenance agreement with the installer provides quarterly inspections and recorded compliance checks. This structured approach helped the business ensure that systems such as solar panels and air units continue to operate efficiently and deliver sustained environmental and financial benefits.

Most businesses engaged in the research highlighted the importance of embedding sustainability into everyday operations. For instance, some retailers who receive daily deliveries retain packaging materials, even if this requires storing them for several months until a suitable item is sold. This systematic approach reduced waste and avoided the need to purchase new packaging.

Strong community engagement was also identified as an important success factor. Many participant businesses operated in areas where they rely heavily on word of mouth and customer loyalty. In this context, community support directly contributed to sustaining environmental initiatives. For example, residents donated unused products to retailers or participated actively in recycling schemes, helping to maintain these initiatives over time.

Finally, a few smaller retailers pointed to the value of developing a short, clear written environmental policy. Such a document translates broad environmental ambitions into practical and manageable commitments, providing structure and focus amid day-to-day operational pressures. It can act as a reference point for decision-making and help ensure that sustainability remains visible within the organisation. For example, one retailer adopted a local recruitment policy, prioritising candidates from the surrounding area. This reduced commuting distances and supported more sustainable travel options, such as walking or cycling, thereby lowering transport-related emissions associated with employee travel.

A small retailer contrasted this approach with detailed carbon footprint calculations and technical reporting requirements, which were perceived as complex, resource-intensive, and difficult to interpret. For a few small businesses, highly technical language and extensive measurement frameworks were seen as impractical. A concise and accessible environmental policy was therefore viewed as a more realistic and effective tool for guiding action.

3.6. Impacts and outcomes

When asked about the impacts observed following implementation, retailers generally perceived that their initiatives were delivering tangible environmental benefits, particularly in relation to waste reduction and improved operational efficiency. Fewer impacts were reported in areas such as organisational culture, regulatory compliance, or supply chain transformation, largely reflecting the operational focus of the initiatives undertaken.

Retailers implementing energy efficiency measures reported reductions in energy consumption, associated cost savings, and improved management of carbon emissions, particularly across on-site operations and purchased energy. For example, one large fashion retailer reported that the initial installation of solar panels on part of their premises led to a 47% reduction in grid electricity use. The business planned to expand solar panels across the entire site, with the goal of transitioning to 100% on-site renewable electricity.

Another business reported that the installation of more than 2,000 solar panels across its warehouse facilities has been the most significant contributor to reducing its carbon emissions. As a result, the business stated that its operations were powered entirely by renewable energy, with improved capacity to monitor and manage building efficiency.

Waste reduction was also widely highlighted as an important impact. The large fashion retailer noted that introducing a customer take-back scheme, whereby used clothing could be returned in exchange for a shopping discount voucher, had contributed to diverting textiles from landfill. Collected items were sent to a sorting facility to be assessed for reuse or repurposing.

Similarly, A Strings, a musical instrument retailer, described how its maintenance service collected damaged guitars from local schools and restored those that could be repaired, extending their lifespan and preventing unnecessary disposal. In a recent collection of 12 damaged guitars from a local school, 9 were restored to use, while components from the remaining instruments were reused for repairs, spare parts, or repurposed into crafted products such as wall clocks. This initiative not only reduced waste but also supported schools by lowering the cost of replacing instruments.

Participants also reported wider business impacts. A Strings explained that by reducing expenditure on new packaging and prioritising reuse and recycling, the business had generated cost savings. These savings were partly reinvested into further carbon reduction measures, including funding carbon offsetting through its delivery provider. This reflects the broader shift identified by Pålsson & Olsson (2025) towards more sustainable omnichannel retail models, where operational efficiency and environmental objectives are pursued concurrently.

Sero Aberystwyth, a food and grocery retailer, reported that its recycling and waste management initiatives had strengthened its business reputation and customer satisfaction. Customers increasingly viewed the shop not only as a retail space but also as a hub for learning about sustainability and exploring practical ways to reduce waste in their own lives.

Gwynedd Distributors Ltd. highlighted substantial cost savings following the replacement of its previous heating and lighting systems. Prior to the upgrade, energy costs were approximately £600 per month. After installing a low-carbon air system, monthly energy costs fell to £165. The subsequent installation of a 13.5 kWh battery and gateway to store energy further reduced monthly costs to approximately £110, demonstrating the financial benefits that can accompany low-carbon investment.

3.7. Replicability and scalability

Businesses emphasised that while most sustainability initiatives are technically transferable, their practical replication depends on factors such as financial capacity, access to specialist expertise, and the operational scale of the business. Based on participants' reflections, initiatives can be grouped into three broad categories according to their perceived ease of replication.

3.7.1. Easily replicable, low-resource initiatives

Initiatives such as LED lighting upgrades, packaging reuse, pre-loved product sales, and upcycled fashion were generally described as straightforward to replicate and requiring limited financial or technical input. For small retailers, replacing lighting systems was viewed as a relatively minor operational adjustment. Packaging reuse was considered largely cost-neutral, provided there is sufficient storage space on-site or established arrangements with suppliers to return or reuse packaging.

For example, the car parts supply business PTB Equipe and A Strings allocated dedicated storage space for reusable packaging materials. By contrast, Sero Aberystwyth worked primarily with suppliers who collect plastic containers and cardboard boxes for reuse or refill, embedding circular practices into routine operations with minimal additional cost.

3.7.2. Replicable with adaptation, support, or moderate investment

Other initiatives, including specialist product recycling schemes (such as blister pack collection), maintenance and repair services, and the use of natural dyes in clothing production, were viewed as replicable but requiring additional knowledge, time, or financial resources.

For instance, producing natural dyes involves cultivating and processing plants, requiring technical knowledge, storage capacity, and sustained commitment. Similarly, specialist recycling schemes may involve ongoing costs, such as payments to providers for collection boxes, representing a recurring financial commitment. Offering repair and maintenance services also requires staff with specialist skills, which can increase costs and create recruitment or retention challenges.

3.7.3. Replicable primarily with substantial funding or external guidance

For participating retailers, renewable energy installations and more complex energy system upgrades were seen as replicable, primarily where substantial upfront investment or specialist guidance is available. Several renewable energy projects were supported through grants or loans, with Business Wales assisting businesses in identifying suppliers to assess premises, install systems, and provide ongoing maintenance and monitoring. In other cases, businesses self-financed improvements, such as low-carbon air systems, viewing them as long-term investments in cost efficiency and resilience.

However, participant businesses acknowledged that these initiatives require significant capital outlay and, therefore, present a greater barrier for many SMEs. As such, scalability is closely linked to access to finance, external advisory support, and confidence in long-term returns on investment.

3.8. Contributions of non-retail stakeholders to the decarbonisation of the retail sector

In addition to responses from retailers, the Call for Evidence received input from councils and shopping centre operators. These organisations can play an important enabling role in supporting small retailers' transition towards lower carbon operations. By shaping the physical infrastructure, operational systems, and governance arrangements within retail environments, they can reduce barriers faced by SMEs that may lack the resources, expertise, or scale to implement decarbonisation measures independently.

Local authorities, for example, provide structured support programmes that combine advisory services with financial assistance. Torfaen County Borough Council, through funding from the Shared Prosperity Fund (SPF), delivered a 3-year programme offering dedicated energy advice to local businesses. This included support to assess energy consumption, identify efficiency improvements through behavioural change or technology upgrades, and access financial support in the form of grants, loans, or capital funding. The programme supported 20 businesses in implementing energy-saving measures, ranging from LED lighting and heating upgrades in small retail units to solar panel installations on multi-tenant commercial buildings and heating optimisation across larger retail sites. Participating businesses were also supported in developing carbon reduction plans.

Shopping centres can also play a role in enabling retailer decarbonisation. Through centralised infrastructure and building management systems, they can influence energy use and waste management across multiple tenants. For example, 2 shopping centres in southeast Wales, which responded to the Call for Evidence, have introduced measures to support retailers in reducing their carbon footprint. One of these centres implemented an energy monitoring system that tracks and analyses building-level consumption. Energy readings for each tenant are collected and shared annually through performance reports, encouraging retailers to reduce usage. This approach contributed to a reported 50% reduction in electricity consumption over recent years.

The other shopping centre respondent focused on optimising its Building Management System to improve energy efficiency and reduce carbon emissions. During tenant fit-outs, LED lighting was mandated and low global warming potential refrigerants were promoted for

HVAC systems, establishing minimum environmental standards for businesses operating within the centre.

In relation to waste management, shopping centres reported segregating food waste, plastic, and cardboard. Some worked with charities to collect and redistribute unsold food, providing retailers with alternative disposal routes and reducing food waste. Others had invested in on-site storage facilities to bulk cardboard and plastic into bales prior to collection, improving recycling efficiency and reducing associated emissions.

Together, these examples illustrate how place-based actors, including councils and shopping centre operators, can create enabling environments that support SMEs in advancing their sustainability objectives.

4. Conclusions

The findings presented in this report draw primarily on evidence from 13 retailers, gathered through interviews and responses to the Call for Evidence, and are supplemented by a review of relevant literature.

Overall, the report finds that participating retailers were pursuing a range of approaches to reach net zero. In line with the Climate Action Roadmap framework, these initiatives spanned 5 areas: embedding emissions data into decision-making (1 initiative), reducing emissions from retail sites (5 initiatives), developing low-carbon logistics (2 initiatives), sourcing sustainable materials (3 initiatives), and promoting low-carbon behaviours among employees and customers (7 initiatives). Examples include improving site-level energy performance, reducing waste, encouraging behavioural change, and strengthening sustainable supply chains.

Initiatives were rarely driven by regulation, incentives, or formal governance triggers, and were instead more often integrated into wider business improvement activities, rather than framed as standalone decarbonisation objectives. The findings suggest that these retailers were embedding sustainability initiatives, not only to be more environmentally responsible but also to improve efficiency, manage costs, and strengthen resilience, particularly in response to rising energy prices and economic uncertainty.

Despite these efforts, participating retailers encountered several barriers to implementing decarbonisation initiatives. They faced financial limitations, as many operate on tight margins and face high upfront costs for low-carbon technologies. They also faced challenges in navigating complex information, including measuring carbon footprints, selecting appropriate technologies, and accessing clear, sector-specific guidance. Some businesses faced challenges in verifying suppliers' environmental claims and diversifying sourcing within fragile or price-volatile supply networks.

Additionally, regulatory and administrative processes could delay projects or introduce unexpected costs, affecting the financial viability of low-carbon investments. Time and staffing constraints are particularly acute for small businesses, where sustainability responsibilities are absorbed into existing roles and compete with core revenue-generating activities.

Alongside these challenges, several factors were identified that enable or support the implementation of these initiatives. One important enabler of decarbonisation initiatives highlighted by retailers is the support received from Business Wales, with advisory services, webinars, training sessions, and accessible guidance playing an important role in shaping planning and development. Engagement with specific programmes was also evident, with some retailers identifying the Green Growth Pledge as particularly effective in helping them identify practical steps to reduce their carbon footprint and improve operational efficiency, while others noted the role of the Accelerated Growth Programme in supporting wider sustainability and decarbonisation strategy development.

The physical characteristics of business premises can also act as an important enabler, with certain layouts and building types making energy efficiency upgrades and renewable energy installations more practical and cost-effective. Embedding sustainability into everyday operations, such as systematically reusing packaging or integrating maintenance practices, may also strengthen impacts by making environmental actions routine rather than exceptional.

Furthermore, findings suggest that engagement beyond the business itself plays an important role in supporting these efforts. Community engagement may support success, particularly for retailers who rely on local loyalty and participation in initiatives such as donations or recycling schemes. Finally, non-retail stakeholders, such as local authorities and shopping centre operators, may play an important role in supporting the decarbonisation of the retail sector by providing adequate infrastructure, financial guidance, and operational support.

The research also explored the potential for these initiatives to be replicated or scaled across the sector. Low-resource initiatives, such as LED lighting upgrades, packaging reuse, pre-loved sales, and upcycling, were viewed by many retailers as easy to replicate, requiring minimal investment or specialist knowledge. A second group of initiatives, including repair services, specialist recycling schemes, or the use of natural dyes, were considered by some businesses to be replicable but dependent on additional skills, time, storage capacity, or moderate ongoing financial commitments.

Renewable energy installations and complex energy system upgrades were seen by several retailers as scalable, mainly where substantial funding or external guidance is available. Although these projects can deliver significant long-term environmental and financial benefits, their uptake is closely tied to access to grants or loans, specialist technical support, and business confidence in achieving returns on investment.

Taken together, the findings demonstrate how a selection of small retailers in Wales have actively contributed to the transition to net zero through a range of practical actions embedded within their day-to-day operations. The evidence gathered through this research highlights both the practical realities of implementation and the conditions that may support successful action. However, the pace and scale of adoption of decarbonisation initiatives depend on the wider ecosystem in which businesses operate.