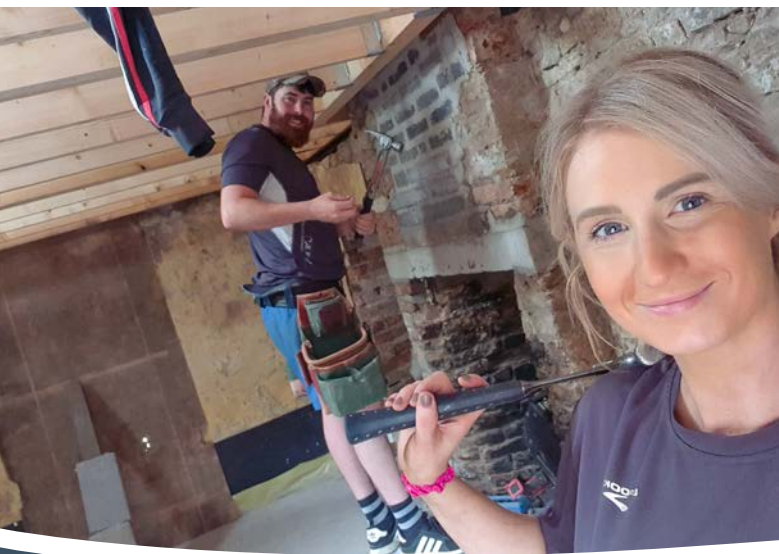




Climate related disclosures

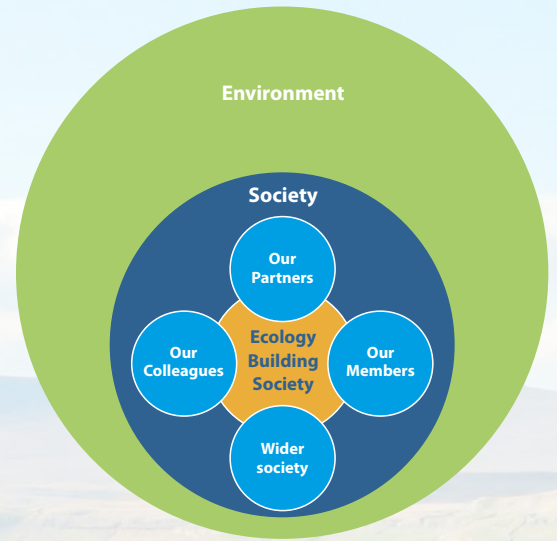


Our Purpose

Our Vision
“A fair society in a sustainable world”

Our Mission
“A Member organisation dedicated to improving the environment and society by enabling sustainable building and communities”

Values
Fairness, Openness, Responsibility, Co-operation and Activism



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Luisa and Chris' barn conversion, Cornwall

Climate-related disclosures

Introduction

Climate change is posing risks to all individuals, businesses, governments and economies. Addressing the climate emergency is central to Ecology's mission and strategy, to enable sustainable building practices and communities. Our lending policy is focused on supporting the construction of properties to a high ecological standard, the renovation of existing properties to reduce energy demand, and sustainable economic activity. Our investments support renewable energy and co-operative community initiatives.

We have continued to increase our activity and capability to respond to the climate crisis. For example, we have:

- Set out our 2030 intermediate targets for our lending, on the journey to net zero by 2050 or sooner, as part of our report 'Financing the Net Zero Transition'
- Published our transition plan to achieve net zero in our business operations by 2030
- Launched our first cashback incentive to reduce the cost of installing either a ground or air source heat pump. The cashback is available across our entire residential product range and is designed to shift the heating of UK homes away from fossil fuels to low carbon, renewable heating technologies
- Expanded our range of C-Change discounts to enhance our support for borrowers who build to the highest energy standards. The C-Change Passivhaus discount increased from 1.25% to 1.50%. We also introduced new levels for SAP A+ (rating 100 – 109) and SAP A++ (rating 110+), delivering discounts of either 1.00% or 1.25% across the expanded C-Change bands
- Developed a new off-site construction mortgage range and teamed up with leading modular manufacturers to create a new range of mortgages to support the growth of off-site, modular housing. Our innovative approach enables lending to be secured on the modular panels before they arrive on site, ensuring that finance is available for different types of self-builders at key stages throughout the build process. We are the first UK lender to bring together modular construction manufacturers with a dedicated mortgage solution (including an advanced payment option) making it easier to access mortgage finance for this type of self-build
- Co-led activities within the Partnership for Carbon Accounting Financials UK (PCAF UK) to improve the measurement of emissions from lending on residential property
- Actively participated in international alliances demonstrating climate leadership: UNEP FI Principles for Responsible Banking, Net Zero Banking Alliance and Global Alliance for Banking on Values.

Overview of climate-related disclosures guidance TCFD



Our climate-related disclosures provide more detail on our approach to climate change, including understanding and mitigating climate-related financial risks – the risks which may materialise in the future as a result of decisions taken today.

Our climate-related disclosures covering Strategy, Governance, Risk Management, and Metrics and Targets will continue to evolve, in line with the guidance of the Task Force on Climate-related Financial Disclosures (TCFD). Table 1 on page 5 summarises our activity on climate-related risks and opportunities during 2022 and our planned activities from 2023.

Table 1 Summary of our activity on climate-related risks and opportunities

Achieved in 2022	Planned activity – from 2023 onwards
Strategy	
<p>Published <i>Financing the Net Zero Transition – our 2030 intermediate targets</i> setting out our targets and plans for our lending on the journey to net zero</p> <p>Enhanced our impact-led mortgage products</p> <p>Used our voice and example to advocate for a national retrofit programme and high energy performance standards for new homes</p> <p>Funded the Building Performance Network to develop and share new resources to improve building performance</p> <p>Actively participated in alliances to help the financial sector respond to climate change</p> <p>Shared our approach to putting climate action at the heart of our financial decision-making in the finance community, through peer-sharing sessions with the UNEP Principles for Responsible Banking, International Association for Investors in the Social Economy, The Japanese Practitioners for Banking on Values and The Building Societies Association</p> <p>Demonstrated commitment to continuing environmental improvement in our business operations</p>	<p>Publish our initial net zero plan and targets</p> <p>Enhance annual stress tests taking account of future climate change scenarios</p> <p>Enhance our impact-led products</p> <p>Increase activity to equip our Members with knowledge to support their transition to net zero and increase resilience to climate change</p> <p>Accelerate the use of our collective voice to agitate for positive change to address the climate emergency</p>
Governance	
<p>Climate risk governance established, with senior management and Board-level engagement, including establishing the Environmental and Societal Impact Board Committee</p> <p>CEO assumed responsibility for embedding climate change risk</p> <p>Knowledge-share sessions held with Board, Executive, Senior Management Team and first line of defence (Mortgage Team and Community and Business Lending Team)</p> <p>Sustainability induction training for new starters and training for all colleagues provided by The Green Register on sustainable building and retrofit</p>	<p>Further develop the Board's and Board Committees' schedule for oversight on climate-related risks and opportunities</p>

Risk Management	
<p>Climate change ambition articulated in line with <i>Our 2030 Strategy</i> and vision</p> <p>Established a clear risk appetite for Climate and assigned senior management accountability aligned to the Society's related risk management framework</p> <p>Enhanced our capabilities to assess potential future physical impacts on our mortgage portfolio under a range of climate change scenarios</p> <p>New Climate Risk Framework used for physical climate risk assessment of properties at mortgage application stage</p> <p>Incorporated climate risk into operational resilience processes</p>	<p>Build on current annual climate risk assessment, implement dynamic management information on climate-related risks</p> <p>Continue to review and evolve credit risk appetites in light of ongoing assessment of climate risks</p> <p>Ensure key suppliers and counterparties are developing climate change resilience plans and monitor their path to net zero</p>
Metrics and Targets	
<p>Measured the carbon footprint of our business operations, commuting, working from home and supply chains</p> <p>Assessed physical risks (flooding, subsidence and coastal erosion) under future climate change scenarios. Using intermediate climate change scenarios, models show that in 2050, only a small proportion of the mortgage portfolio would be considered at high risk of flooding or subsidence and no properties would be considered at risk of coastal erosion</p> <p>Measured the emission intensity (kgCO₂/m²) and financed emission intensity (kgCO₂/£ of lending) of our mortgage portfolio using the Global GHG Accounting and Reporting Standard for the Financial Industry</p> <p>Published 2030 targets for our mortgage portfolio, aligned with achieving net zero lending in 2050</p>	<p>Continue to develop metrics to assess physical climate risks, including engaging with research and innovation in data and modelling tools</p>

Background

Human-driven climate change

Humans are the dominant force driving climate change on our planet. Our consumption of fossil fuels to power economies is destroying our natural ecosystems. Modern society is increasing the amount of carbon dioxide and other greenhouse gases in the atmosphere while simultaneously limiting the capacity for nature to absorb and store carbon. Levels of carbon dioxide are higher than at any time in at least the last two million years, trapping heat and destabilising the long-term weather patterns we depend on.

Climate-related risks

A range of physical and economic risks could materialise in the future as a result of climate change, affecting individuals, businesses, governments and economies. The magnitude and nature of these risks will be determined by actions taken today. It is therefore essential that information on future risks is used to inform decisions in the present, to help reduce emissions and to adapt to future climate change impacts. The Financial Services industry is exposed to climate-related risks and opportunities through lending and other financial intermediary activities, as well as through its own operational activities.

There are two main categories of climate-related risk: physical risk and transition risk.

Physical risks

The physical risks of climate change can arise from the increasing severity and frequency of extreme weather events, such as flooding, coastal erosion, subsidence, extreme weather events, and from sea level rise. These impacts can cause damage to assets, changes in individuals' health and incomes, and business disruption, driving financial losses and impaired asset values. For example, properties at future risk of flooding because of more intense rainfall may be subject to increased insurance premiums, may be inaccessible or unusable for periods of time and their value may decrease.

Transition risks

Transition risk is the risk associated with the process of adjustment towards a low-carbon economy, where greenhouse gas emissions are cut and measures are implemented to remove excess carbon from the atmosphere. The responses from governments, industries and consumers to climate change are likely to result in societal and economic changes. Many of these changes are unpredictable, giving rise to many risks, such as abrupt changes in the cost of energy and raw materials, higher fuel bills, changes in customer preferences, disruption to business models, job losses in specific sectors and regulatory changes to drive down emissions.

A rapid whole economy transition

The international community recognises the threat of climate change and many world leaders have signed the Paris Agreement, which aims to limit heating to well below 2°C and pursue efforts to limit it to 1.5°C. The average global temperature is already 1.2°C above pre-industrial times. To limit warming to 1.5°C, global emissions of greenhouse gases need to be reduced rapidly in coming years, with a 45% reduction by 2030, and emissions reaching net zero by 2050. Many governments and businesses have committed to reaching net zero, however, there is still a substantial gap between promises and action. In November 2022, the independent Climate Action Tracker predicted heating of 2.7°C above pre-industrial levels, based on the existing policies, commitments and pledges around the world.

A rapid whole economy transition is needed, with major progress this decade, phasing out fossil fuels and dramatically scaling up clean, renewable energy infrastructure. The pace and scale will be unprecedented. All businesses, including financial institutions, must be part of the solution, helping to reduce emissions and adapt to climate change. Addressing climate change therefore creates opportunities for businesses to respond with new products and services. Enormous financial resources are needed to address climate change, both to reduce emissions and to promote adaptation to the impacts that are already occurring. This will require both public and private finance. Financial institutions can help to drive the transition by ensuring lending, investments and business strategies support the net zero economy and build resilience.

Strategy

Tackling the climate and ecological emergency

Ecology Building Society's role is to be part of the solution to tackling the climate crisis. We have committed to net zero in our business operations by 2030 and net zero in our lending by 2050 or sooner.

Net zero is achieved when greenhouse gas emissions are reduced as much as possible and the remaining amount is removed from the atmosphere by technological or natural solutions.

When Ecology was created in 1981, the founders were motivated by concerns over environmental degradation and consumerism. 40 years on, climate change, ecological collapse, deepening social inequalities, war returning to Europe and a global pandemic are the defining issues. In 2021, our Members, colleagues, Board and key partners co-developed *Our 2030 Strategy*, setting out our vision for 2030 and how we will address the climate and ecological emergency in this pivotal decade. In 2022, we published our intermediate targets for our lending and continued

implementation of our plans to achieve net zero in our business operations.

Unlike traditional businesses which aim to maximise shareholder value while identifying some examples of doing good, our priority is to create holistic system value, maximising positive economic, social and environmental impact on the social system we are part of, while taking action to mitigate the negatives.

System Value – Creating holistic value for society and the environment



Ecology's work is focused on six strategic Ecology outcomes, which all seek to mitigate climate change:



We will achieve these outcomes through:



Our business model

As a building society, Ecology is owned by, accountable to, and run for the benefit of our Members. Ecology's principal purpose, enshrined in our Memorandum, is making loans which are secured on residential property that are funded substantially by our Members, promoting ecological policies designed to protect or enhance the environment in accordance with the principles of sustainable development.

The Society has a relatively simple business model of savings (deposit taking) and lending (mortgages for sustainable buildings, community developments and finance for sustainable developments). The Society exists to fulfil its mission of mediating the flow of finance from savers who wish to achieve positive environmental and social impact, to borrowers who wish to build or renovate energy-efficient properties and community-oriented buildings. In 2022, our new mortgage lending increased by 0.22% and the number of savings accounts increased by 22.6%.

Our lending

Ecology's mortgages are focused on generating an ecological benefit, in terms of saving energy or other scarce resources, or supporting sustainable communities. Our mortgages fund the purchase or construction of new homes and community buildings built to high standards of energy performance, and the renovation or conversion of existing buildings to improve their energy efficiency, reduce emissions and therefore minimise exposure to the transition risk of higher fuel bills.

- We reward energy efficiency through our C-Change discounts applied to the mortgage interest rate. We use data from Energy Performance Certificates (EPC) and verified standards such as Passivhaus and AECB Standards to award a greater

C-Change discount to mortgages of homes with a higher energy performance. In 2022, we enhanced our range of C-Change discounts by increasing the segmentation of properties with the highest energy performance (above 100 SAP points on the EPC) to incentivise borrowers to maximise their SAP score.

- We launched our first cashback incentive to contribute to the cost of installing either a ground or air source heat pump. This is a drive to influence and change the behaviour of heating UK homes away from fossil fuels to low carbon, renewable heating technologies.

- We introduced a new off-site construction mortgage range and teamed up with leading modular manufacturers to launch our new range of mortgages to support the growth of off-site constructed, modular housing.

Construction

We support the construction of new homes and community buildings that meet our ecological criteria. We specify an entry-level energy efficiency standard for new homes, which we increased from 85 to 88 SAP points in 2022. We welcome non-standard construction types and materials. Through our bespoke approach

Energy Performance Certificates (EPCs)

Score	Energy rating	Current	Potential
92+	A		105 A
81-91	B	88 B	
69-80	C		
55-68	D		
39-54	E		
21-38	F		
1-20	G		

EPCs were originally introduced to summarise the energy efficiency of a dwelling and to recommend measures to increase efficiency and reduce running costs. EPCs are currently the mostly widely available source of information on a home's energy performance and operational carbon emissions. The EPC provides emissions from regulated energy use (for space heating, lighting and water heating), calculated using the Standard Assessment Procedure (SAP) model which is based on a property's size, fabric, heating system, lighting and renewable technologies. The greater the energy efficiency, the greater the SAP points score. The EPC provides both the current score and the potential score that could be achieved through recommended improvements. The EPC provides an Energy Efficiency Rating, from A (very efficient) to G (inefficient), based on ranges of SAP points. For example, a property with a SAP score of between 81 and 91 points has an Energy Efficiency Rating of B. The EPC also provides an estimate of annual operational carbon emissions from the property's regulated energy use for space and water heating and lighting.

to lending, we proactively support new building techniques, provided they meet our sustainability criteria, including the off-site manufacture of components, kits and modules that are then transported and erected on site.

Retrofit

Retrofit refers to upgrading existing properties to improve their energy efficiency (e.g. through improving insulation) and reducing carbon emissions (e.g. through upgrading heating systems). Currently, about 20% of the UK's total carbon emissions comes directly from homes, mostly from boilers burning natural gas for hot water and space heating. Around 80% of the houses that will exist in 2050 are houses that people are currently living in. A high proportion will need to be retrofitted to meet the UK's target for net zero by 2050.

Retrofit of existing properties is an important part of our lending.

We take care to make our lending products suitable for 'hard to treat' properties, recognising the value in retaining existing buildings rather than demolishing them. We favour lending on properties that start off with poor standards of energy efficiency, recognising that their high demand for heating exposes occupants to fuel prices rising and emits more carbon dioxide, on the basis that our mortgage lending funds improvements to the property and its energy efficiency, while reducing fuel use. Mortgage payments are released in stages as property improvements are made. We take a bespoke approach to assessing the planned improvements, considering any constraints posed by the nature of the property. Generally, planned improvements lead to the property's energy performance increasing two steps or more in the property's Energy Efficiency Rating.

We recognise that the overall carbon footprint of our mortgage book will increase as we increase our lending on retrofit projects, due to the fact that these properties have relatively high emissions before retrofit improvements are completed. We expect the carbon footprint of our mortgage portfolio to fluctuate, reflecting the status of renovation properties in our mortgage portfolio. As retrofit works are carried out, properties will transition from poor to good energy efficiency.

Net zero

We have committed to achieve net zero in the financed emissions arising from our lending by 2050 or sooner. We also seek to support use of low-impact materials and construction methods, as well as adaptation and resilience to the physical impacts of climate change, such as over-heating.

Our 2030 intermediate targets

We have committed to achieve net zero in our lending by 2050 or sooner, taking a fabric-first approach to improve the energy efficiency of properties and supporting low-carbon heating. We have set two intermediate targets to be achieved by 2030 for the main property types in our lending portfolio. Our targets are expressed in terms of operational carbon dioxide emissions arising from fossil fuels used to provide regulated energy (for space and water heating, lighting and ventilation) when the home is in use.

Ecology Building Society commits to:

- reduce new build residential mortgage portfolio operational GHG emissions from regulated energy use (Scope 3, category 15) by 50% per m², by 2030 from a 2020 base year
- reduce retrofitted residential mortgage portfolio operational GHG emissions from regulated energy use (Scope 3, category 15) by 50% per m², by 2030 from a 2020 base year
- The 50% reduction is consistent with science-based scenarios aligned with keeping global temperature rise within 1.5°C

Extract from Our 2030 Strategy published in November 2021

Assessing the physical risks at mortgage application stage

When evaluating new mortgage applications, we take account of the risk of flooding, subsidence and coastal erosion to inform the potential impact on future property values. We do not lend on properties that would be unable to obtain insurance under standard conditions at the present time. We are continuing to embed an assessment of future physical risks of climate change, obtained through a new consultancy arrangement, into our credit assessment process.

We recognise the growing global risk of overheating in homes, especially in some flats, resulting from heat waves and poor ventilation. At present, considerable academic research is being undertaken to quantify the risk of overheating. Building regulations are also evolving to recognise the importance of adequate ventilation. Although the nature of our lending (to achieve high ecological standards) would generally mitigate overheating under present weather conditions, climate models indicate a greater prevalence of heat waves in the coming years. We will continue to follow these developments to incorporate them into our approach.

Our Members

Engagement with our Members, including in our AGM and Member Meet-ups during 2022, consistently shows that addressing the climate emergency is a top priority and a major motivation for their membership of the Society. We share case studies of our lending to inform and inspire our existing and future Members. We will continue to actively engage with our Members throughout 2023 and beyond to help us guide our strategies both now and in the future.

Agitation for change

Ecology exists to serve our Members and deliver on our ecological mission, guided by our values of Fairness, Openness, Responsibility, Co-operation and Activism. Since our inception, we have been an active participant in the environmental movement, seeking ways to build a fair and sustainable society. In our activist role, we agitate for change in the broader societal system, by advocating and innovating, and incubating new ideas into impactful solutions that others may adopt, helping to scale up system change.

Our agitation for change in 2022:

- Co-sponsored the launch of the National Custom and Self-Build Association's (NaCSBA) inaugural market report, which highlights the importance of energy efficiency in self-build, and shared a platform with the Secretary of State for Housing at the event in Parliament
- Paul Ellis, then Chief Executive, gave evidence to the House of Lords Environment and Climate Change Select Committee's inquiry into mobilising action on climate change and the environment. Paul discussed our C-Change mortgages highlighted the importance of a National Retrofit Programme and fiscal measures, such as cutting VAT on products and services for retrofit
- Co-chaired the Partnership for Carbon Accounting Financials UK (PCAF UK), to develop and promote best-practice in carbon accounting by UK financial institutions, including working with the PCAF UK Residential Property group to engage with the Department for Business, Energy & Industrial Strategy (BEIS) on improving data on carbon emissions from residential property
- Actively participated in workshops held by BEIS on the benefits achieved through the use of smart meters
- Supported the work of Bankers for Net Zero developing policy recommendations for retrofit and engaging Parliamentarians
- Attended peer knowledge-sharing with members of the UNEP FI Principles for Responsible Banking, Net-Zero Banking Alliance and the Principles for Responsible Investment on our mission-led approach to lending
- Advocated for a carbon-conscious approach to construction materials in the Futurebuild Big Issues series
- Took part in the UK Government's Community-Led Housing Revenue Grants panel, working with Locality, the National Community Land Trust Network and other professional advisors, including influencing the panel to put low-carbon design into their scoring mechanism as a priority
- Supported the campaign activity of a range of key sector and NGO partners on issues including supporting the transition to net zero, fossil fuel divestments, energy efficiency and retrofit

Our role in creating system change



Our investments

We have a small number of investments in renewable energy and co-operative and community finance. Our investment decisions are made in full alignment with our mission and values. We do not seek to maximise profit through an extractive model, but rather to maximise the creation of environmental and social value while generating a fair economic return. We recognise that, as well as enabling individual projects, our investments can help to demonstrate support for new areas, which in turn attracts other investors. This was a key factor, together with the voice of our Members, in making our investments in small-scale renewable energy projects.

Our business operations

We know that, as we work on our ecological mission of helping others to live more sustainably, we must lead by example. Our *Sustainability at Ecology Plan* focuses on six areas to drive continual environmental improvement: carbon, people and culture, infrastructure, resources and waste, travel and nature. We have reported our annual operational carbon footprint since 2012 and we offset residual emissions through tree-planting schemes certified by the Woodland Carbon Code.

We are a member of Investors in the Environment (iE), which carries out an annual green audit of our business operations. In 2022, we achieved the prestigious green award. During 2022, we continued to partner with social enterprise, Giki, to provide colleagues with a personalised programme to understand how to reduce their carbon footprints and protect the environment together. Giki co-founder, Jo Hand, also helped to inspire our Members at our AGM and Members Meet-up in April.

Identifying climate-related financial risks

Our lending is fully focused on reducing the carbon footprint of homes and community buildings, which will help to smooth the transition to a low-carbon economy. However, climate change poses a wide range of risks that may materialise in the short (1-5 years), medium (5-15 years) and long (15+ years) terms, and it is imperative that we continue to assess and manage these risks as part of our business strategy.

Climate risk is cross-cutting and impacts on all of the Society's five risk categories: strategic, credit, ethics, financial and operational. More information on how climate change could impact these strategic risks is provided in Table 2 on page 15.

The demonstration and understanding of climate change is woven into our purpose and it is essential we consider all climate-related risks, whether financial or not, as material to our business model and strategy. Table 2 (on page 15) also highlights the aspects of our 2030 Strategy which are designed to respond to, and mitigate, these risks.

Responding to strategic risks and opportunities

Climate change creates opportunities as well as risks. Ecology has been an advocate for sustainable lending throughout our 40-year history, but we recognise that much more needs to be done. There is a limited window for action before the remaining carbon budget is used up and global temperatures reach catastrophic levels. Humanity must dramatically reduce our use of fossil fuels and move to clean, renewable energy, while adapting to the impacts of climate change that are already happening. The need to respond urgently to the climate emergency presents Ecology with its greatest strategic risk and its greatest strategic opportunity, requiring us to be innovative, agile and responsive in a changing environment.

Continuing to fulfil our mission

We are an ethical financial institution, adhering to our ecological mission and our values of Fairness, Openness, Responsibility, Co-operation and Activism. Our mission to build a greener society matters: we commissioned a nationwide consumer research programme in partnership with Censuswide which shows that nearly three quarters (74%) of savers would like their money to have a positive impact on the environment and society.

We recently appointed Forster PR to support us with raising awareness of our brand, amplifying the work of the Society and helping to position us as an agitator for change.

We believe that all financial institutions have a critical role to play in setting the expectation on net zero, by setting interim targets that define the path to net zero for emissions arising from their loans and investments, and providing lending products that stimulate the low-carbon transition. Our lending products and services will continue to evolve to support the journey to net zero and to ensure that we are at the forefront of the financial sector.

During 2022, we've worked to establish the science-based targets that our mortgage lending should achieve by 2030 (intermediate targets). 'Science-based' means the targets are aligned with achieving net zero by 2050 and the Paris Climate Agreement of limiting global temperature rise. We have set two intermediate targets to be achieved by 2030 for the main property types in our lending portfolio:

New build residential property (where our mortgage lending has funded the construction of the building)

Retrofitted residential property (where our mortgage lending has funded the retrofit or conversion of the existing building)

The separate targets recognise the inherent difference in these two property types and therefore the emission intensities that they are able to achieve. Our targets are expressed in terms of operational carbon dioxide emissions arising from fossil fuels used to provide regulated energy (for space and water heating, lighting and ventilation) when the home is in use. For each property type, we seek to reduce the emission intensity by 50% between 2020 and 2030. More information, including the basis for our intermediate targets, can be found in *'Financing the Net Zero Transition – our intermediate targets for 2030'*.

Achieving net zero emissions from residential properties is an urgent issue requiring a determined, collaborative effort. There are a number of dependencies, such as availability of materials, suppliers, policy frameworks, technology and infrastructure. We are collaborating to facilitate removing barriers as much as possible.

The wider financial sector is beginning to recognise that achieving net zero is an enormous (but achievable) challenge, requiring concerted effort across society. Minimising energy demand is an essential component of reaching net zero. It contributes to energy security and more affordable heating bills and requires less energy to be generated in the first place, therefore reducing the investment in infrastructure for energy generation and distribution. Improving energy efficiency is urgently required to address the cost of living crisis, social inequalities and climate breakdown.

We are urging policymakers to set out clear policy frameworks, including appropriate regulations and incentives to improve building standards for new and existing properties, so that all stakeholders can confidently invest to deliver net zero homes. We advocate for embodied carbon to be measured in the property's Energy Performance Certificate and included in building regulations. One critical dependency will be the appetite of borrowers to build or renovate their homes to a high standard of energy efficiency and to adopt low-carbon heating. We will collaborate to facilitate, inspire and inform our current and future borrowers as much as possible.

The green and sustainable mortgage market

For four decades, our mortgage lending has been fully focused on supporting sustainable buildings and we have continually made the case for greener homes. We welcome the fact that, at long last, there is a growing general awareness of the need to tackle carbon emissions from domestic properties and to make our homes fit for the future. This awakening has spurred an increase in the number of lenders developing 'green' mortgage products, together with new disclosure requirements encouraging firms to engage with sustainability in a way that they have not previously done. However, although green intentions and disclosures are always welcome, what is needed is rapid translation into meaningful impact.

We expect the mortgage market to evolve rapidly in order to promote energy efficiency, a development we have long been campaigning for, to enable improved energy performance for all properties. Although this could be seen to pose a risk to Ecology in terms of increased competition, the growing green finance market creates considerable opportunities, which we are responding to in implementing our 2030 Strategy.

We describe Ecology mortgages as 'sustainable mortgages' rather than green mortgages. Our whole balance sheet is mobilised to provide lending for environmental and social gain, with funding from savers who seek impact and are aligned to our lending policy, with each mortgage transaction aiming at a positive outcome for the planet.

Our offer has, therefore, always been different from the mainstream lenders, and this will continue even as others pivot in response to climate risks, regulatory requirements and customer preferences. We will continue to evolve and adapt to meet the needs of our current and future Members while demonstrating authenticity and coherence across all our activities, in line with our ecological mission and values. We will continue our main business channels of residential self-build, conversion and renovation, community housing and small-scale development finance for the construction and renovation of homes, workspaces and community spaces. We recognise the enormous scope for innovation in renovation and construction and supporting these approaches, in line with our 2030 Strategy, will open up new lending opportunities. Our tailored approach of considering each project individually to understand its environmental and social merit, engaging with our borrowers and innovators at an

early stage, staying engaged through the project, and being open to considering unusual and innovative projects, will stand us in good stead to support new forms of ecological housing. We will work closely with our borrowers, partners, supply chains (designers, energy assessors and manufacturers), policy makers and other financial institutions, to pave the way for high performance, cost-effective, energy-efficient housing that is fit for the future.

Ecology is unique among UK lenders in being fully focused on its mission to support sustainable buildings and communities. This commitment to mission has meant that, despite our relatively small size, we can use our credibility and reputation to be a vocal advocate for improvements to housing standards and national infrastructure and for adaptation to climate change. We will use our voice to stand out, to reach potential borrowers, and to continue our agitation for change to address environmental and social challenges.

The potential impacts of climate change on Ecology

The nature of climate change and society's response to it means we need to identify and respond to a range of possible climate-related risks and opportunities. Table 2 on page 15 illustrates examples of how climate change may affect Ecology's five risk categories, their expected time horizons and the potential impact on the business and our Members.

The table also indicates the priorities set out in our 2030 Strategy, which will enable Ecology to mitigate the risks and take opportunities to address climate change.

Table 2 Climate-related risks:

The potential impacts of climate change that may affect Ecology and our strategic response

Climate-related risk category	Examples of the potential impact caused by climate change	Time horizon [Note 1]	Potential climate risk indicator [Note 2]	Our 2030 Strategy response [Note 3]
Strategic risk				
Transition	<i>Mission and business model - growth in green finance market</i> Increased competition from other green finance providers on savings and lending products may affect our financial performance New market entrants provide range of attractive alternative green financing options Introduction of minimum energy standards for private-owner-occupied property drives lenders to accelerate innovation in green mortgage products Enhanced building regulations for energy efficiency drives other lenders to accelerate innovation in green mortgage products	Short-medium	High	<div style="background-color: #0056b3; color: white; padding: 5px; text-align: center; border-radius: 10px;">Impact-led products and services</div> <div style="background-color: #0056b3; color: white; padding: 5px; text-align: center; border-radius: 10px;">Collaboration and knowledge share</div> <div style="background-color: #0056b3; color: white; padding: 5px; text-align: center; border-radius: 10px;">Agitation for change</div> [Note 4]
	<i>Reputation</i> Commitments to achieve net zero in lending or business operations may be hindered by inadequate government policies and regulation failing to improve building regulations and renewable energy provision or by fragmented supply chains that cannot meet demand for net zero homes			
	<i>Policy and regulation</i> Failure of government to invest in national energy infrastructure to transition fully from fossil fuels to clean, renewable energy means properties will be unable to achieve net zero emissions Failure of government to incentivise renovation and construction of net zero-ready properties (through improved building regulations and appropriate incentives) affects demand for energy-efficient homes Political attention being diverted or derailed resulting in a loss of momentum on net zero policy and investment	Short-medium	High	
	<i>Economy</i> Changes in macroeconomic environment, including impacts of war in Europe and the ongoing cost of living crisis, may affect confidence of new borrowers Increased cost of raw materials, as the economy shifts away from fossil fuels, increases construction and renovation costs for mortgage borrowers, as well as fragmentation in the supply chain Failure of policies to enable a smooth transition to curtail climate change impacts may cause an economic downturn and job losses, limiting new deposits or mortgage applications			

Strategic risk continued

Physical	<p>Increased severity and frequency of extreme weather events causing flooding, coastal erosion, subsidence and over-heating, and damage to local and national infrastructure, leading to economic impacts and interest rate changes impacting Members' behaviour in relation to savings and mortgages</p> <p>Changes in precipitation patterns and extreme variability in weather patterns affects food production, fresh water availability, living environment, heating and cooling demand, and local infrastructure, disrupting and diverting our activities away from delivering our strategy</p> <p>Rising temperatures affect living conditions, working conditions and local infrastructure, disrupting and diverting our activity away from delivering our strategy</p>	Medium-long	Medium	<p>Collaboration and knowledge share</p>
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Credit risk

Transition	<p>The creditworthiness of borrowers may be affected, leading to default, for example, due to abrupt and unexpected shifts in energy costs, increased cost of living and changes in job market</p> <p>The value of properties that do not meet energy standards may diminish</p> <p>The value of properties with existing (fossil fuel) technology may diminish</p> <p>Meeting new building regulations for new or retrofit property may prove challenging for borrowers' budgets</p> <p>A failed transition will lead to contraction of the economy, affecting borrower confidence, reducing demand for new mortgage lending</p> <p>Increased cost of raw materials may deter the retrofit or construction of new homes, including reduction in self-build projects</p>	Medium	High	<p>Impact-led products and services</p> <p>Collaboration and knowledge share</p> <p>Agitation for change</p>
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Physical	<p>Current or future physical climate risks may give rise to:</p> <ul style="list-style-type: none"> - Diminished value of mortgaged property - Increased insurance costs - Increased demand for products for property adaptation (e.g. flood defence, cooling) <p>Disruption of supply chains affects construction and retrofit activity</p>	Medium	Medium-high	<p>Agitation for change</p>
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Conduct risk				
Transition	<p>Members may be disproportionately impacted if transition to a low-carbon economy is not fair and just</p> <p>The drive to address climate-related risk could threaten our adherence to mission causing an imbalance in our lending away from wider societal benefit and failure to agitate for positive societal change</p> <p>A failure to embed a culture aligned with our core values could result in poor outcomes for Members and an inability to achieve our mission, e.g.:</p> <ul style="list-style-type: none"> – The best interests of our Members are not recognised within our decision-making process or policies and procedures – Our product design and innovation does not respond effectively to meet the needs of our Members as climate change evolves – The benefits and risks of our products are not clearly articulated to our Members to enable them to make informed decisions 	Medium	Medium	<p>Impact-led products and services</p> <p>Collaboration and knowledge share</p> <p>Agitation for change</p>
Physical	<p>Members may be disproportionately impacted by the physical impacts of climate change depending on the location, energy efficiency and climate resilience of their homes</p> <p>Members need information to understand how their property may be affected under future climate risk scenarios to make informed decisions</p> <p>Members require help to build their resilience and adapt their homes and communities to climate change</p>	Medium-long	Medium	<p>Impact-led products and services</p> <p>Collaboration and knowledge share</p> <p>Agitation for change</p>
Financial risk				
Transition and physical	<p>The potential financial impacts of the risks associated with climate change may result in a material change in capital requirements or capital holding</p> <p>Decrease in savings balances may arise due to:</p> <ul style="list-style-type: none"> – economic distress of existing and future Members – loss in confidence in Ecology as a result of reputational damage on approach to addressing climate change <p>Widespread market repricing in response to climate-related policy and regulation</p> <p>Value or net income from assets and liabilities may be affected by interest rate movements in response to economic impacts of climate change</p> <p>Increased financial impacts may arise from:</p> <ul style="list-style-type: none"> – Increase in business costs to demonstrate compliance – Increase in costs from suppliers in order to achieve our net zero commitments – Increase in competition from other lenders providing green finance products – Changes to regulations which may affect the accounting treatment of innovative products 	Medium-long	Medium	<p>Impact-led products and services</p> <p>Collaboration and knowledge share</p> <p>Agitation for change</p>

Operational risk				
Transition	<p>Costs associated with reporting in order to demonstrate our sustainability credentials and differentiate our offer against a growing tide of greenwash may increase</p> <p>Enhanced emissions-reporting obligations</p> <p>Increased costs associated with regulatory changes</p> <p>Increased costs to respond to climate risks may divert investments to other areas of operational infrastructure and strategic change</p> <p>Increased demand for talent from other green finance providers may affect our ability to recruit and retain high calibre colleagues with the necessary skills and experience and who are aligned to our mission and values</p> <p>Increased costs for appropriate and relevant training for all colleagues</p> <p>Increased costs or lack of availability of suitable suppliers aligned to our mission</p>	Short-medium	Medium	<p>Impact-led products and services</p> <p>Collaboration and knowledge share</p>
Physical	<p>Physical impacts such as flooding or storm damage may result in:</p> <ul style="list-style-type: none"> - Damage to office or loss of systems or key data - Colleagues unable to access key systems and data - Failure of third parties to deliver goods and services - Increased Member communication activity in response to physical event 	Medium - long	Medium	<p>Agitation for change</p>

Note 1 Time horizon – short - (1-5 years), medium - (5-15 years) and long-term - (15+ years)

Note 2 The potential climate risk indicator illustrates the magnitude of impact on Ecology as a business, or on Ecology's Members, where high indicates substantial disruption and/or financial impact.

Note 3 Areas of our 2030 Strategy that address climate risks and opportunities. See Strategy section for a description of our 2030 Strategy priorities.

Note 4 See Risk Management section for more detailed discussion on key strategic risks and how we propose to mitigate them.

Our approach to scenario analysis

By assessing different scenarios, we are able to explore the resilience and vulnerability of our business model and strategy against a range of outcomes.

Transition risk

The stress testing we carry out to inform our regulatory requirements (ILAAP and ICAAP) provides reassurance of Ecology's resilience to macroeconomic pressures (cost of living / war in Europe), employment changes and property values, which map onto potential transition risks. This is an area for further work in 2023. We will continue to evolve our scenario testing, informed by the Bank of England's regulatory guidance.

Physical risk

We commissioned third-party consultants with expertise in physical climate risk to carry out an analysis of our mortgage book under a range of future climate change scenarios. The physical risks tested were flooding, subsidence and coastal erosion. For properties in Northern Ireland, the

analysis only included flooding, but we are looking to include subsidence and coastal erosion in due course. Given climate change impacts take time to materialise, the models assess the physical risks over several decades. The models also take account of planned interventions, such as flood defences and shoreline management plans.

To enable some commonality and benchmarking of scenario assessment, the Intergovernmental Panel on Climate Change (IPCC) has developed a set of representative concentration pathways (RCPs) for a range of future emissions of greenhouse gases at the global level. The Met Office and other agencies have modelled future UK climate using the RCP scenarios.

We have assessed the future flood and coastal erosion risks under three RCPs:

- RCP2.6 is representative of a scenario that aims to keep global heating below 2°C, and requires emissions to be reduced in line with the Paris Climate Agreement, with net zero being achieved in 2050

- RCP6.0 is described as a medium, intermediate scenario with some constraints on emissions, but with emissions not achieving net zero until 2100

- RCP8.5 is a business as usual scenario, with emissions continuing to rise, leading to very dangerous global heating in coming decades

In general, we have selected RCP6.0 to inform our risk management approach. Although we are hopeful that the Paris Climate Agreement will succeed in limiting global temperature rise, we cannot rule out future climate disruption. For subsidence risk, the model currently only covers RCP8.5, the worst case scenario. Physical risks take time to materialise and get worse over time. We have selected the 2050s as the time frame for our assessment of physical risks, given the typical mortgage term is up to 30 years. You can read more about the results of our physical risk assessment in the section on Metrics and Targets.

Governance

The chart outlines how governance on climate risk operates at Board, Board Committee and Executive and Management levels.



Board and Board Committees

The Board oversees the Society's response to climate risk through defined governance and oversight which is embedded in the articles of association.

The Board skills matrix has been clarified so that environmental awareness includes fundamental understanding of climate change and the associated physical and transition risks. Three of the Non-Executive Directors have specific skills on climate risk and the built environment. During 2022, the Sustainability Lead facilitated workshops on net zero scenarios, targets and transition plans with the Board, Senior Leadership Team and management team, leading to the publication of our 2030 intermediate targets for our lending. In addition, Board members regularly attend externally provided seminars, including on regulatory requirements.

The Board ensures that the Management Team takes full account of climate risk in its decision-making and assesses the materiality of climate-related risks over the short, medium and longer term, and opportunities on an ongoing basis. The Board ensures that the organisation's actions and responses are proportionate to the materiality of climate risks.

Senior Leadership Team

The Chief Executive Officer (CEO) is responsible for ensuring that climate risk is embedded across the Society. The CEO is supported by the Senior Leadership Team, who have combined responsibility for keeping abreast of external developments and opportunities relating to science, policy and innovation, where Ecology can drive forward on its environmental and social mission. The Chief Operating Officer (COO), Finance Director, and Chief Risk Officer (CRO), all have specific objectives relating to climate risk and resilience. The COO and Finance Director are

responsible for ensuring the Board is provided with appropriate high-quality relevant management information, to enable Board members to assess climate risks, materiality and opportunities. The CEO, in combination with the CRO and Finance Director, is the executive sponsor overseeing climate-related disclosures.

Climate is a key responsibility for all Members of the Risk and Compliance Team, Mortgage Team, Community and Business Lending Team and Finance Team. Operating procedures incorporate assessment, management and mitigation of climate risk. Knowledge share sessions to understand climate change, net zero, the transition to a low-carbon economy and managing our personal footprint have been held with all colleagues and the Board. Climate risk training sessions have been held with the Board, Senior Leadership Team, Managers, the Mortgage Team and Community and Business Lending Team. Risk roles and responsibilities are summarised in Table 3.

Risk Management

Climate Risk is one of the Principal risks of the Society and forms a part of the Risk Management Framework.

The Society's definition of climate risk is: The risk that our strategy, financial planning and business activities fail to mitigate the impact of climate change.

The Society's Risk Appetite definition is: The Society will actively address the impact of Ecology's activities on climate change and the impact of climate change on Ecology by managing and mitigating current and future physical and transition risks and agitating for positive change.

And the Society, to support the appetite has developed what 'we will' and 'we will not' statements for Climate Risk:

We will

- Achieve net zero in our business operations by 2030
- Incentivise and reward borrowers for improving the energy efficiencies of their properties and reducing their carbon footprint
- Ensure key suppliers and counterparties are developing climate change resilience plans and their path to net zero
- Accelerate the use of our collective voice to agitate for positive change to address the climate emergency
- Enhance our impact-led mortgage products to increase innovation in sustainable design, retrofit, construction and materials

We will not

- Engage in activities that have a negative impact environmentally on our business operations and increase our carbon footprint
- Engage with key suppliers and counterparties who are not committed to responsible management of resources and materials and achieving net zero
- Provide mortgage funding which increases carbon emissions
- Enter into partnerships with those who do not share our commitment to our ecological mission
- Create products that do not have an ecological benefit in terms of saving energy or resources, or supporting sustainable communities

Our climate change ambition statement

Addressing the climate emergency is central to our mission and strategy. We will achieve net zero in our business operations by 2030, and in our lending by 2050, or sooner. We will do this through the provision of impact-led products and services, the sharing of knowledge, and agitation for wider system change. In all our activities, we seek to minimise the impact of physical and transition climate risks on the Society, our Members and wider society.

Table 3 Risk roles and responsibilities

Lines of defence	Roles and responsibilities (as at 31 December 2022)
1st line	<p>Identification, assessment, management and monitoring of climate change risks</p> <p>Reporting of climate risk management information</p> <p>CEO has Senior Management Function responsibility on climate risk</p> <p>Implementation of climate risk stress-testing scenarios and associated metrics</p> <p>Third parties – including for quantitative modelling for future physical risks under a range of climate change scenarios</p>
2nd line	<p>Risk and Compliance function has oversight and challenge</p> <p>Chief Risk Officer oversight</p> <p>Horizon scanning for regulatory and reporting developments</p> <p>Risk Committee and RACE</p>
3rd line	<p>Internal Audit provides independent assurance on activity and effectiveness of Society's control framework</p>

Management of climate-related risks

As a risk that is embedded in all our five risk categories, climate risk is managed as part of the Society's risk management controls and procedures. In addition, specific controls that merit particular mention given their centrality to our mission and purpose are described below.

Strategic risk – business model and reputation

Climate-related risks have long been a consideration in our management of our strategic risk, in terms of business model, economy, reputation and the fulfilment of our ecological mission. During 2021, strategic risk was a key consideration to inform the development

of *Our 2030 Strategy*, led by the CEO and Sustainability Policy and Innovation Lead. The strategy sets out how we will address the climate and ecological emergency, while continuing to differentiate ourselves from our competitors and continue to be commercially successful. Horizon scanning is important to inform strategic risk management. In addition to scanning competitors' positioning and products, we have enhanced our activities to engage in public policy discourse and development and to carry out research and thought leadership, in order to assist with product development and the offer to our Members.

Credit risk

At mortgage application stage, an assessment is made of:

- **Physical risk** of flooding, subsidence and coastal erosion under present conditions.
- **Transition risk** in terms of the energy efficiency of the property.

During 2022, we carried out an assessment of the whole loan book under a range of future climate change scenarios from the present day to the year 2080. We have selected the 2050s as the period to report our assessment, given the typical mortgage term is up to 30 years. The assessment showed the exposure to high physical climate risk (flooding, coastal erosion and subsidence) was relatively low, demonstrating that our lending policy to date has been robust in avoiding

lending on properties at risk from future physical impacts of climate change. In terms of transition risk, although other lenders may be concerned about the number of F and G-rated properties on their loan books, Ecology proactively lends on such properties in order to improve their energy performance. All Ecology mortgages for retrofit properties are targeted at improving their energy efficiency rating and so cutting energy bills, as well as cutting carbon emissions. We monitor the status of works and update the EPC rating as the project is completed. The EPC ratings of our mortgage portfolio are, therefore, very dynamic, as properties start off with poor performance and improve, and as we continue to issue new lending on properties at the start of their retrofit journey.

Metrics and Targets

We use a range of metrics to demonstrate the impact of Ecology on climate change (carbon emissions) and the potential future impact of climate change on Ecology (physical and transition risk assessments).

Carbon emissions from our business operations

We have reported the carbon footprint of our business operations since 2012. Emissions in 2022 were 425.9 tonnes CO₂. This is a 47% increase in our emissions in 2021 (289.7 tonnes, updated to reflect best available data), which had increased considerably from the previous year due to the pandemic (241 tonnes in 2020). In 2022, our business activity has increased with another year of record new lending and the number of savings accounts increasing by 22.6%.

Whilst our absolute carbon footprint for 2022 has increased substantially, our emissions per full time employee (FTE) have decreased to 7.5 tonnes of CO₂ from the updated 7.8 tonnes/FTE. Emissions per £ of mortgage lending for 2022 is 6.12g CO_{2e}. This is an increase from 2021 which has been updated to 4.17 grams CO_{2e} per £ of mortgage lending.

In 2020, the pandemic led to an increase in working from home, leading to a substantial reduction in commuting emissions and business travel. We adapted our measurement of the carbon footprint to include emissions from colleagues working from home as well as commuting, which continued into

2021. As pandemic restrictions were lifted, we have implemented a hybrid working policy. We acknowledge that, at present, we are unable to eradicate our dependence on fossil fuel use, especially from our suppliers, commuting and business travel. We therefore have a policy to use accredited carbon offset schemes, which plant trees to absorb the amount of carbon equivalent to our total carbon footprint as presented in Table 4. Nevertheless, we do not seek to rely on offsets, and are working to reduce our actual emissions.

Our day-to-day business activities, as well as projects and new initiatives, are targeted at ultimately minimising our use of fossil fuels and hence carbon emissions. For example, technology for heating buildings is now developing at a rapid rate, and we are currently reviewing low-carbon heating options for our offices. We generated 17% of our electricity through onsite solar energy generation and purchase the rest through a green tariff with Ecotricity. We have a sustainable travel plan to encourage and enable colleagues and visitors to make more active, healthy and environmentally-friendly decisions for travel and transport, including eliminating unnecessary travel.

Carbon emissions arising from the Society's business operations, commuting and supply chains

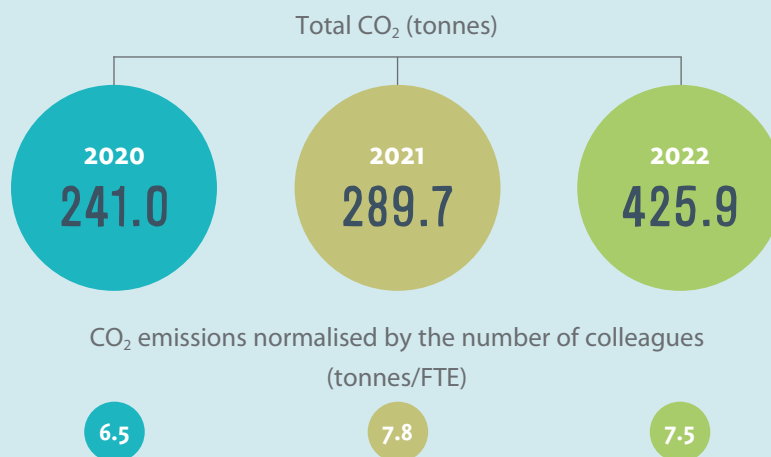


Table 4 Emissions arising from Ecology's business operations, commuting and supply chains in 2022

Scope 1	Emissions (tCO ₂ e)
Gas use at Ecology offices [Note 1]	5.1
Scope 2 (gross)	
Electricity use at Ecology offices	5.7
Scope 2 (net)	
Electricity use at Ecology offices [Note 2]	-
Scope 3 [Note 3]	
Business services (e.g. information technology)	252.4
Depreciation, maintenance and other utilities	47.4
Office consumables	12.3
Gas and electricity (scope 3)	2.7
Food and catering	23.7
Business travel and accommodation	23.3
Commuting	38.3
Homeworking emissions	15.0
Total	425.9

Note 1: Technology for heating buildings is now developing at a rapid rate. We are currently reviewing low-carbon heating options for our offices.

Note 2: Solar PV technology on our Silsden office generates around 17% of our annual electricity use. This is a significant reduction from 2021 (30%) due to our Solar PVs being removed for building maintenance during the summer months. We purchase the rest on a green tariff from Ecotricity.

Note 3: Scope 3 (excluding lending) is a large category covering business travel, commuting, working from home and purchased goods and services as well as the upstream emissions to produce them. The emissions associated with our lending are assessed in the next section.

Carbon emissions from our mortgage lending

In 2021, we were the first building society to report our carbon accounts, which show the financed emissions arising from our mortgage lending. Previously, we had reported the average energy efficiency rating from the EPCs for properties in our portfolio. We use the new Global Greenhouse Gas Accounting and Reporting Standard for the Finance Industry (the PCAF Global Standard) developed by PCAF. Ecology became one of the first members of the PCAF UK when it formed in October 2020 and, during 2021, co-chaired their Residential Lending Working Group to share and improve best practice on measuring and reporting carbon emissions from

residential property, culminating in a report launched during COP26.

The PCAF Global Standard states that emissions arising from all energy use consumed by the buildings' occupants should be reported.

There are two elements to carbon emissions from a residential property:

- Regulated emissions from fossil fuels used to provide energy for space and water heating, and lighting (taken from the EPC, where available)
- Unregulated emissions from fossil fuels used to provide energy for other uses, such as appliances and chargers.

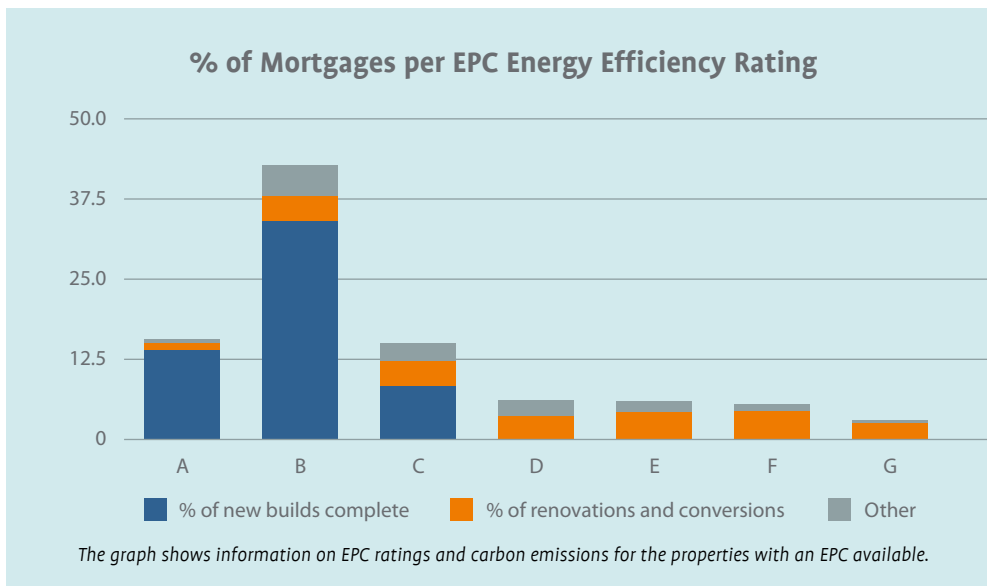
While combining regulated and unregulated emissions gives a complete picture of the emissions, some UK financial institutions have chosen to report only financed regulated emissions, as they are directly influenced by the mortgaged aspects, i.e. the fabric, heating technology and lighting of the property. We have reported both:

- Financed total emissions (regulated and unregulated) in line with the PCAF Global Standard
- Financed regulated emissions for consistency with our peers

Table 5 Financed emissions for our mortgage portfolio at the end of 2022

Table 5 Scope 3 – Mortgages: Financed emissions					
Emissions from properties with an EPC (52% of Ecology mortgages)					
Emission data quality score 3, based on PCAF Global Standard [Note 1]					
	Outstanding Balance (£000)	Financed regulated CO₂ emissions (tonnes)	Financed total CO₂ emissions (tonnes)	Financed emission intensity based on regulated emissions only (kg CO₂/£000)	Financed emission intensity based on total emissions (kg CO₂/£000)
		[Notes 2,4]	[Notes 3,4]	[Note 5]	[Note 6]
Self-, custom- and new build (where construction is complete)	56,801	318	427	4.6	6.2
Renovations and conversion (where the works are complete) [Note 7]	18,214	297	330	13.5	15.0
Renovations and conversion (where the works are ongoing) [Note 7]	10,135	296	314	59.9	63.4
Other	16,236	181	207	14.9	17.1
Sub total	101,386	1,092	1,278	10.8 (weighted)	12.6 (weighted)
Emissions from properties that are completed but do not have an EPC (23% of Ecology mortgages)					
Emission data quality score 5, based on PCAF Global Standard [Note 8]					
Sub total, all types	47,353	322	402		
Emissions from all new, renovation and conversion properties where works are complete, ongoing renovation and conversions with an EPC and Other properties EPC (75% of Ecology mortgages).					
Weighted emission data quality score 3.6, based on PCAF Global Standard					
Total	148,739	1,414	1,680		

- Note 1:** The PCAF Global Standard gives guidance on defining data quality with a score of 1 assigned to highest quality data where emissions are based on actual fuel consumption through to score 5 for lower quality data where emissions are estimated. We rate carbon emissions from EPCs as data quality score 3, as they are estimated using the SAP model based on details about the property's form, fabric and technology.
- Note 2:** Regulated emissions (for space and water heating and lighting) come from the EPC for each property where it is available. A recognised limitation of EPCs is that the carbon emissions are not automatically updated to reflect the changing carbon intensity of the grid. We are working on how to address this.
- Note 3:** For total emissions, emissions for each property include the regulated emissions from the EPC and an estimate of emissions from other (unregulated) energy use. Property-specific information on unregulated energy use is not available, therefore we applied an average to all properties, calculated from the typical consumption value from Ofgem and the Government's most recent greenhouse gas conversion factors. Unregulated energy changes each year, partly due to occupant behaviour (for example, the move to electric cars, will result in more charging at the property) and partly due to the carbon intensity of the national electricity supply, which is gradually decreasing.
- Note 4:** Financed emissions are calculated by multiplying the property emissions by the ratio of loan to value. The PCAF Global Standard recommends using the valuation at origination. However, the majority of Ecology mortgages involve the release of funds as the property is built or renovated and its valuation increases, in which case the loan to value ratio for each property was calculated based on the latest valuation, rather than the valuation at origination. The latest valuation may include an adjustment to the last physical valuation based on the regional house price index for each mortgaged property.
- Note 5:** Financed emission intensity based on regulated energy is a measure of carbon emissions from annual regulated energy use at all properties with an EPC, per thousand pounds of lending.
- Note 6:** Financed emission intensity based on total (regulated and unregulated) energy is a measure of carbon emissions from total energy use at all properties with an EPC, per thousand pounds of lending.
- Note 7:** Where a property is still undergoing works (renovation or conversion) or where works are complete, but a new EPC assessment has not yet been carried out, the carbon emissions are taken from the pre-works EPC.
- Note 8:** A proportion of properties do not have an EPC, either because their purchase pre-dates the requirement for one or because an EPC assessment has not yet been carried out since works have been completed. We have used known EPC data to estimate emissions for properties where works are complete, but their EPC is not yet available.



The spread of ratings reflects the fact that Ecology mortgages enable renovation of some properties that start off in a deteriorated or derelict condition. At any given time, our portfolio is made up of properties that have been built or renovated to a good standard and properties with ratings in the lower EPC bands where Ecology is supporting their improvement through our renovation lending. When renovation works are completed, these properties will achieve a higher energy efficiency rating. We are currently working to identify methods to measure the improvement in terms of carbon emissions that have been avoided as a result of renovation.



Mildmay Club, Stoke Newington, London - backed by an Ecology loan to renovate the iconic Grade II listed building's slate roof and fund a partial refurbishment of the interior

Based on all the EPCs currently available for properties in our mortgage portfolio, the average SAP score was 74, equivalent to an energy efficiency rating of C. SAP points are calculated in the Standard Assessment Procedure model to work out a property's energy efficiency.

Properties that are undergoing renovation and conversion generally achieve a lower energy rating (and higher emissions) after completion of the works than a new build property, reflecting the challenges in retrofitting an existing property compared with building in energy performance from the outset.

We have recalculated the emissions for 2022 using our latest refined methodology and updated information on the unregulated emissions in 2022. In 2022, financed total emissions were 1,680 tonnes and financed regulated emissions were 1,414 tonnes. Between 2021 and 2022, our financed regulated emissions decreased by 9.5% (2022: 1,414 tonnes; 2021: 1,563 tonnes). This was despite an increase in the number of mortgaged properties in our portfolio. Measuring the financed emissions intensity in kgCO₂ per £1000 of lending, permits a comparison by normalising for the amount of lending in a given year. In 2022, the financed regulated emission intensity was 12.4 kgCO₂/£000 and in 2022 this decreased to 10.8 kgCO₂/£000.

The financed emissions and spread of energy ratings across our mortgage book is dynamic, reflecting the balance of new and existing properties and the transition of poorly performing properties undergoing retrofit to reduce their emissions. We seek to continue to increase our lending on renovation and conversion, which is predicated on environmental improvements being made to the property.

Financed regulated emission intensity in 2021
12.4 kg CO₂ / £000

Financed regulated emission intensity in 2022
10.8 kg CO₂ / £000

Physical carbon intensity

We have calculated the physical carbon intensity of the properties in our mortgage portfolio, in terms of carbon emissions per square metre of floor area, where the floor area is taken from the EPC. The average physical carbon intensity based on regulated emissions across all mortgaged properties was 22.9 kgCO₂/m² compared with 23.6 kgCO₂/m² in 2021.

Transition risk assessment

As well as emitting high amounts of carbon dioxide, properties that have poor levels of insulation are at greater risk of higher fuel bills when energy prices increase. Properties that have an energy efficiency rating in the lowest bands (F or G) would be considered at greater transition risk than higher rated properties. Although we have a number of properties that begin with an F or G rating, the nature of our mortgage lending is targeted at improving the energy efficiency rating of these properties, and so mitigating the risk of higher fuel bills.

Physical risk assessment

We have used market-leading consultants in climate risk to assess the exposure of our mortgage book at the end of 2022 to the physical risks of flooding, subsidence and coastal erosion.

Although we are hopeful that the Paris Climate Agreement will succeed in limiting global temperature rise, we cannot rule out future climate disruption. Therefore, we have selected the more pessimistic RCP6.0 scenario for our assessment, rather than the more optimistic Paris-aligned scenario RCP2.6. For subsidence risk, the climate risk model currently only covers RCP8.5 – the worst case scenario. Physical risks take time to materialise and get worse over time. We have chosen to report on the results for the 2050s, given the typical mortgage term is up to 30 years. Our assessment will evolve over time to take account of property-specific and local adaptation mitigation.

Flooding

Under the medium emission scenario (RCP6.0), in the 2050s, taking account of current and planned flood defences, 10.0% of Ecology mortgaged properties in the UK may be at high risk of flooding (impacted by one in 30 year flood events or by less frequent, but more severe, flood events, such as one in 75 years). From this assessment, we conclude exposure of Ecology's mortgage portfolio to future flood risk is low.

Coastal erosion

Under the medium emission scenario (RCP6.0), taking into account planned shoreline management plans, we assessed the potential for coastal erosion to affect Ecology mortgaged properties in Great Britain. Zero properties in the analysis were at risk from coastal erosion in the 2050s. The climate model for coastal erosion does not yet include Northern Ireland. In 2022, 11% of Ecology's mortgaged properties were in Northern Ireland.

Subsidence

Under the worst case, high emissions scenario (RCP8.5), in the 2050s, 10.1% of Ecology mortgaged properties in Great Britain could experience an increase of 10% or more in their subsidence risk. This is an increase on the updated value for 2021 of 9.8%. We do not yet have data to be able to assess subsidence risk for properties in Northern Ireland. Given RCP8.5 is a worst case scenario, we conclude the exposure of our mortgage book to future subsidence risk as a result of climate change is low.

Future work Strategy

Our 2030 Strategy is focused on addressing climate change, both in terms of our impact on climate change and the impact of climate change on our Members. We will continue to develop our products and services to ensure we help our current and future Members to make their homes more energy efficient and to be resilient to the climate impacts that are already on the horizon. We are increasing our activity to facilitate the sharing of knowledge and impactful solutions between Members and experts, on ecological construction, renovation, adapting homes to climate change, community projects, green energy and sustainable living. In line with our strategic priority to agitate for change, we will continue to advocate for policy and regulatory change to facilitate financing the transition to a low-carbon economy in a socially just and equitable way. We are also working collaboratively with national and international alliances of financial institutions to develop targets, standards and frameworks to embed sustainable development and net zero into the finance system.

Governance

We will continue to embed our approach to climate risk, particularly using the detailed assessments of physical climate risks under a range of scenarios to inform our lending policy and underwriting processes. We are developing future climate scenarios to ensure we adequately address climate risk in our capital and liquidity.

Risk Management

We are continuing to improve our assessment of physical and transition risks and we will continue to work with our third-party consultants to extend the assessment of subsidence and coastal erosion risks to include Northern Ireland. Climate Risk Appetite, moving from a more qualitative to quantitative approach, will be further embedded through the risk management framework through 2023.

We will build on current annual climate risk assessment towards more dynamic management information on climate-related risks and work with suppliers and counterparties to ensure they are developing climate change resilience plans and their path to net zero.

Metrics and Targets

We will continue to support PCAF UK, helping to improve the quality and availability of data to measure the emissions from residential property. Our intermediate targets for our lending are expressed in terms of emission intensity, calculated using the carbon emissions (from regulated energy use for space and water heating, lighting and ventilation) and floor area from the Energy Performance Certificate (EPC) for each property, which is the best property-level information currently available. The limitations of EPCs to provide accurate operational carbon emissions are well-recognised and we expect improvements in data accuracy in the near term. We therefore expect to adjust the baseline and targets as the data improve, ensuring that we continue to align with science-based net zero pathways, and will continue to be transparent in our approach to this.

We are undertaking further work to develop how we assess physical climate risks, including engaging with research and innovation in data and modelling tools. We recognise that overheating is a future climate risk for properties in the UK; however, there is a lack of widely available data for lenders to be able to assess it. We are working to assess new research in this area to inform potential models and metrics, so that lenders can start to assess this important risk.

Glossary

Some of the terms we use in this Climate related disclosure are explained below:

Assets

Something belonging to the business that has value. For Ecology, this means liquid assets, mortgage assets and fixed assets.

Capital

Profit retained by Ecology to act as a buffer against losses.

Climate-related risk

Potential negative impacts of climate change.

Counterparties

The banks, building societies and money market funds that hold Ecology's liquid assets.

Depreciation

Depreciation is both the gradual writing down of the value of an asset and the allocation of the cost of the asset over the period of time that it is used.

Energy Efficiency Rating

A rating from A-G to reflect the energy efficiency of a property, shown on the Energy Performance Certificate, with A being the best performing.

Financed emissions

The emissions associated with financed activities. For a mortgaged property, the financed emissions are calculated by multiplying the property emissions by the ratio of loan to property value.

Financed emission intensity

The emissions per financial unit, associated with financed activities. For mortgaged properties, this is the financed emissions arising from the property per pound of mortgage lending.

ICAAP

Internal capital adequacy assessment process.

ILAAP

Internal liquidity adequacy assessment process.

IPCC

Intergovernmental Panel on Climate Change.

Liabilities

Something the business is legally responsible to repay to others. For Ecology, this means our Members' savings, our reserves, and debt we owe to other organisations.

PCAF

Partnership for Carbon Accounting Financials.

Physical carbon intensity

The carbon dioxide emissions per unit of output or measurement. For mortgaged properties, physical carbon intensity is typically the amount of carbon dioxide emitted per square metre of floor area of the property.

Physical risks of climate change

Potential negative impacts arising from the increasing severity and frequency of extreme weather events, such as flooding, coastal erosion and storms, and from sea level rise. These impacts can cause damage to assets, changes in individuals' health and incomes, and business disruption, driving financial losses and impaired asset values.

RACE

Risk, Audit, Compliance and Ethics Committee.

Regulated energy

Energy used for space and water heating, cooling and lighting.

Representative concentration pathways (RCP)

These represent a range of scenarios of future emissions of greenhouse gases at global level. They are developed by Intergovernmental Panel on Climate Change (IPCC) to enable some commonality and benchmarking of climate risk assessment. RCP2.6, 6.0 and 8.5 are summarised on page 19.

Scope 1, 2, 3

Scopes 1, 2, 3 categorise the different sources of greenhouse gas emissions, defined in the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard.

Standard Assessment Procedure (SAP)

The UK Government's National Calculation Methodology for assessing the energy performance of dwellings.

Transition risks

Potential negative impacts arising from the process of adjustment towards a low-carbon economy, where greenhouse gas emissions are dramatically cut and measures are implemented to remove excess carbon from the atmosphere. These impacts can affect society and the economy.

Unregulated energy (emissions)

Unregulated emissions from fossil fuels used to provide energy for other uses, such as appliances and chargers.