

Climate related disclosures



Building a greener society

March 2022

Our Purpose



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Charlotte and Alex's sustainable timber-framed self-build, Brighton

Introduction

Human activity is causing climate change, 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 built 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.

During 2021, we have increased our activity and capability to respond to the climate crisis. For example, we have:

- Co-developed and launched *Our 2030 Strategy* setting out our priorities for this pivotal decade to urgently address the climate and ecological emergency, including adapting to the inevitable impacts of a changing climate
- Committed to achieve net zero in our business operations by 2030 and net zero in our lending by 2050 or sooner
- Raised the minimum energy efficiency eligibility requirements for our self-build mortgage product
- Substantially increased our lending for renovation projects (126% increase in number of mortgaged renovation properties)
- Co-led activities within PCAF UK to improve the measurement of emissions from lending on residential property
- Committed to the UN-convened Net-Zero Banking Alliance as a founding signatory, building momentum for all financial institutions to align their lending and investments with net zero
- Supported thought leadership at COP26, in partnership with Architects Climate Action Network (ACAN), UK Green Building Council (UKGBC) and Glasgow Financial Alliance for Net-Zero (GFANZ)

Overview on 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 that 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 summarises our activity on climate-related risks and opportunities during 2021 and our planned activities from 2022.

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

Achieved in 2021	Planned activity – from 2022 onwards
Strategy	
<p>Launched <i>Our 2030 Strategy</i> focusing on the climate and ecological emergency</p> <p>Committed to net zero in our business operations by 2030 and net zero in our lending by 2050 or sooner</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>Joined alliances to help the financial sector respond to climate change</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</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>Further develop the Board 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>Climate risk integrated across all risk categories in Risk Management Framework</p> <p>Continued evolution of our Risk Management Framework to identify and incorporate material climate risk causes and exposure</p> <p>Enhanced our capabilities to assess potential future physical impacts on our mortgage portfolio under a range of climate change scenarios</p> <p>Assessed climate-related risks of our existing mortgage book under a range of future climate change scenarios</p> <p>Incorporated climate risk into operational resilience processes</p>	<p>Building on current annual climate risk assessment, implement dynamic management information on climate-related risks</p> <p>With new capabilities to screen future physical risks, 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 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>Enhanced our property-level physical and transition risk data</p> <p>Assessed physical risks (flooding, subsidence and coastal erosion) under future climate change scenarios. Using intermediate climate change scenarios, models show that in the 2050s, 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>Started research to identify 2030 targets for our mortgage portfolio, to be aligned with achieving net zero lending in 2050</p>	<p>Work with partners to define science-based targets for our mortgage portfolios of new and retrofitted properties as interim targets to achieve by 2030 on the path to net zero</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 our 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.

The physical impacts of climate change are increasingly apparent, with extreme weather events leading to heatwaves, droughts, flooding, storms, hurricanes and wildfires, and the melting of glacial ice. Climate models predict that such physical impacts will increase. By how much, and where, will depend on how the world responds to the existential threat of climate change.

Climate-related risks

A range of physical and economic risks may 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. Financial institutions are exposed to climate-related risks and opportunities through their lending and other financial intermediary activities as well as through their own operations.

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

Physical risks

The physical risks of climate change arise 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. For example, properties at future risk of flooding as a result 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 dramatically cut and measures are implemented to remove excess carbon from the atmosphere. The response of governments, industries and consumers to climate change will result in societal and economic changes. Many of these changes are unpredictable, giving rise to a large number of 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 particular 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. The independent Climate Action Tracker predicts heating of 2.1°C based on current policies, commitments and pledges, including those made at the COP26 in Glasgow in November.

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

For the planet to remain safe and liveable, widespread economic, societal and policy change is needed, and this decade is the critical window of opportunity for action. Ecology's role is to be part of the solution to climate change. 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. Forty years on, climate change, ecological collapse, deepening social inequalities 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.

Unlike traditional businesses that 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. Our 2030 strategy focuses on enabling people and the environment to benefit from homes with good ecological performance, sustainable communities, and a fair and sustainable economy. We take a collaborative approach, working with and for the benefits of our members, colleagues, partners and wider society.

System Value – We seek to create holistic value for society and the environment



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

<p>Our lending funds ecological buildings that are better for people and the environment</p>	<p>Our lending and business activities promote responsible management of resources and materials</p>	<p>Our lending creates community-led housing and sustainable communities</p>	<p>Our lending increases innovation in sustainable design, retrofit, construction and materials</p>	<p>Our inclusive community of members creates positive impact</p>	<p>Our activities catalyse change in the financial system for a fair and sustainable future</p>
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We will achieve these outcomes through:

<p>Impact-led products and services</p> <p>Providing impact led products and services designed to reduce carbon emissions, increase resilience and support the transition to a low-carbon economy.</p>	<p>Collaboration and knowledge share</p> <p>Enabling collaboration and knowledge share to help our members and their communities to make their homes more energy efficient, to live sustainably and to adapt to climate change.</p>	<p>Agitation for change</p> <p>Agitating for change in wider society to address the climate emergency, including thought leadership and taking action on ecological homes and sustainable finance.</p>
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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 ethical savings, mortgages for sustainable buildings and development finance for small-scale developments, and a small number of investments in renewable energy and co-operative finance. 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 2021, our new lending increased by 76% and the number of savings accounts increased by 16%.

Buildings are a source of carbon dioxide emissions as a result of the fossil fuels used to heat and power them. To reduce these operational emissions, we must reduce the demand for energy by increasing insulation (a fabric-first approach) and move from fossil fuel-based heating sources to low-carbon heating technologies, such as heat pumps and heat networks.

Carbon emissions also arise from the fossil fuel energy used in a building's construction and maintenance, both of which are components of a building's embodied carbon. Current building regulations do not take account of embodied carbon, something we are campaigning for. By supporting renovation and conversion projects, we recognise and value the embodied

carbon already invested in existing buildings. Our lending supports responsible use of materials that have a low embodied carbon footprint and can be re-purposed at the end of a building's life, including reclaimed and recycled materials, and bio-based materials such as timber and natural fibres.

Our lending

All Ecology mortgages are fully 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 and therefore reduce emissions to 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 and verified standards such as Passivhaus and AECB Standards. Higher energy performance achieves a greater C-Change discount.

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, 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 further 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.

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 2021. We welcome non-standard construction types and materials. Through our bespoke approach to lending, we proactively support new building techniques, provided they meet our sustainability criteria, including the offsite 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 15% of the UK's total carbon emissions comes directly from homes, mostly from boilers burning natural gas for hot water and space heating. 80% of the houses that will exist in 2050 are the houses that people are currently living in, and

they 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 their high demand for heating emits more carbon dioxide and the occupier would be particularly exposed should fuel prices rise) on the basis that our mortgage lending is used to fund improvements to the property that will improve its energy efficiency and reduce 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. In general, 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. More properties in need of retrofit will be added to our portfolio. We are currently working on methods to measure the improvements in terms of avoided carbon emissions due to our retrofit lending.

Net zero

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

Our net zero commitment

We have committed to achieve net zero in our lending by 2050 or sooner, taking a fabric first approach to improve properties' energy efficiency, and supporting heating technologies that are compatible with net zero. We're currently working on establishing carbon emission intensity targets (kg of CO₂ emitted per square metre of property floor area) for our mortgage portfolios of new and existing properties to achieve by 2030 as interim targets on the path to net zero.

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 embedding an assessment of future physical risks of climate change, obtained through a new consultancy arrangement, into our credit assessment process. Further information is provided on page 26.

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 member consultation in summer 2021, 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. Commencing in 2022, we will increase our activity to equip our members with knowledge to make their homes and communities more sustainable and resilient, creating more opportunities for the sharing of knowledge.

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, Ecology has been part of 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 to create new ideas, incubating ideas into genuinely impactful solutions, and demonstrating solutions that others may adopt, helping to scale up system change.

Our role in creating system change



Our agitation for change activities support our strategic Ecology outcomes. Examples of our activities in 2021 include:

- Co-chairing the UK Residential Working Group of PCAF UK, and publishing a report at COP26 to share best practice on measuring emissions from mortgaged properties
- Active participation in the Department for Business, Energy & Industrial Strategy (BEIS) consultation and workshops on how to improve the energy efficiency of homes in the UK through lenders' actions
- Membership of the Bankers for Net-Zero working group on policy recommendations for retrofit which were published in *The Retrofit Revolution* report
- Founding signatory of the Net-Zero Banking Alliance, which co-developed Guidelines for Climate Change Target Setting for Banks and joined COP26 Race to Zero
- As a member of Green Finance Institute's Coalition for Energy Efficiency in Building, we supported a range of policy recommendations (e.g. energy efficiency stamp-duty land tax) and helped to pioneer the Green Home Finance Principles
- Partnering with ACAN to support advocacy on home retrofit and the recognition of embodied carbon at COP26
- Partnering with the UK GBC to support the Built Environment Virtual Pavillion which showcased innovation under the theme of 'Build Better Now' at COP26

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 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 2021, we were awarded the iE Overall Outstanding Achiever (SME) Award. In 2021, we partnered with social enterprise Giki to provide colleagues with a personalised programme to understand how to reduce their carbon footprints and protect the environment together.

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 a cross-cutting risk that impacts on all 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. 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 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. Life on earth is experiencing a planetary emergency. 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 to our members (97% of members who responded to our member consultation in 2021 stated that Ecology's mission was important to them).

A significant reputational risk would arise if Ecology failed to live up to its mission. We mitigate this risk by thoroughly embedding our mission in all our actions and by *our 2030 strategy* being fully focused on continuing to fulfil our mission in this coming decade. A key part of this is the journey to achieve net zero in our business operations and lending.

We believe that all financial institutions have a critical role to play in setting the expectation on net zero (through setting interim targets to define the path to net zero for the 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.

We are currently working to establish the science-based targets that our mortgage lending should achieve by 2030 (interim 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 are currently working on interim targets for new and existing properties, to be achieved through combinations of high levels of energy efficiency (through insulation), low-carbon heating, domestic renewables and potentially natural solutions to absorb a property's unavoidable emissions. There are a number of dependencies, such as availability of materials, suppliers,

policy frameworks, technology and infrastructure. We will collaborate to facilitate removing barriers as much as possible. One 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. Our mortgage products require properties to achieve environmental performance standards, and also reward increased energy efficiency by reducing the interest rate for good energy performance. Our strategy is focused on equipping borrowers with the inspiration and knowledge they need, as well as innovative products, to carry out their project.

The wider financial sector is beginning to recognise that achieving net zero is an enormous (but achievable) challenge, requiring concerted effort across society. The UK Government must act to accelerate investment in national renewable energy infrastructure to facilitate a rapid move away from fossil fuels. It must also support skills and supply chains for retrofit and construction and provide appropriate regulations and incentives to improve building standards for new and existing properties. We are urging policymakers to set out clear long-term policy frameworks, so that the sector can confidently invest in green innovation and infrastructure.

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 other lenders developing 'green' mortgage

products, together with new disclosure requirements encouraging other lenders 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 balance sheet is in its entirety mobilised to provide lending for environmental and social gain, with funding from our savers seeking impact and 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 mainstream lenders 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, work-spaces 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 the 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 20 illustrates examples of how climate change may affect Ecology's five risk categories, their expected time horizons and the potential impact on Ecology (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.

Strategic risk continued

Physical	<p>Increased severity and frequency of extreme weather events causing flooding, coastal erosion, subsidence and overheating, and damage to local and national infrastructure, causes 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> <p>Rising sea levels affect coastal land use and increase subsidence, erosion and floods, reducing activity to build or renovate property</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>
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>

Ethics 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"> – Increases in taxation, including carbon tax – 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 	Medium-long	Medium	<p>Impact-led products and services</p> <p>Collaboration and knowledge share</p> <p>Agitation for change</p>

Operational risk

<p>Transition</p>	<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>	<p>Short-medium</p>	<p>Medium</p>	<p>Impact-led products and services</p> <p>Collaboration and knowledge share</p>
<p>Physical</p>	<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 	<p>Medium - long</p>	<p>Medium</p>	<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

Ecology was not asked to participate in the Bank of England Climate Biennial Exploratory Scenario in 2021, due to our relatively simple business model. However, the stress testing we carry out to inform our regulatory requirements (ILAAP and ICAAP¹) provides reassurance of Ecology's resilience to potential downturns in the economy, employment changes and property values, which map onto potential transition risks. This is an area for further work in 2022. We will continue to evolve our scenario testing, informed by the Bank of England's three scenarios of early policy action, late policy action and no policy action and by further regulatory guidance.

Physical risk

During 2021, 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.



Note 1 – ILAAP: Internal liquidity adequacy assessment process; ICAAP: Internal capital adequacy assessment process

Board and Board Committees

As well as the Risk, Audit, Compliance and Ethics Committee (RACE), the Board has the Assets and Liabilities Committee as an advisory body overseeing financial risks and the Board Lending Committee as an advisory body for credit risk management. The Society's Development Strategy Planning Committee assists the Board in identifying and addressing strategic risks in the development of the Corporate Plan. All committees have oversight of climate risk in their terms of reference.

Given the unique mission of the Society, the Board skills matrix has always required environmental awareness to be a critical skill that must be demonstrated by the Board. 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. The Board receives a regular horizon scanning report on the state of the global climate crisis and the response of policymakers, businesses and civil society, enabling Directors to consider the evolving external landscape on business decisions and strategy. The Board has an annual knowledge update session provided by the Sustainability Policy and Innovation Lead, to ensure all members have command of the subject, including the science of climate change, current and future impacts, risks, adaptation and potential low-carbon future scenarios, so that they are able to debate and make decisions in a way that is comprehensively informed. Addressing climate change was at the heart of five Board sessions to co-develop *Our 2030 Strategy* in 2021. Director Louise Pryor, an expert in climate risk, also led a Board session on a strategic review of climate risk. 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.

Executive and Management Teams

The Chief Executive Officer (CEO) is responsible for ensuring that climate risk is embedded across the Society. The CEO is supported by the Sustainability Policy and Innovation Lead, who has 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, Chief Risk Officer, Head of Risk and Compliance and the Governance Manager 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 Finance Director is the executive sponsor overseeing climate-related disclosures.

Climate risk includes strategic, reputational, credit, financial and operational risks, and is therefore 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, Executive, Senior Managers, the Mortgage Team and Community and Business Lending Team. Risk roles and responsibilities are summarised in Table 3.

Risk Management

Addressing climate risk is integral to our business purpose and strategy. Rather than treating it as a separate risk, it is integrated into our five risk categories, within our Risk Management Framework. The Risk Committee first carried out a comprehensive review of climate-related risks for each risk category in 2019 and identified relevant physical and transition risks. The Risk Management Framework has continued to evolve since then, with the most recent review as part of the annual review of risks in 2021, and ongoing work by the Climate Risk Working Group. Identified risks and their causes are captured in the Society's Risk Management Database and are categorised according to likelihood and consequence at both an inherent and residual level.

The Risk Committee also reviews and recommends the Society's risk appetite, for approval by RACE and the Board. Risk appetite is defined as a statement of how much risk the Society is willing to accept, tolerate or be exposed to at any point in time in pursuit of its strategic objectives. Our risk appetite provides clear guidance on the limits of risk exposure that are acceptable and in line with the Society's Board-approved strategy. Climate risk is integrated in the risk appetite for each risk category in the Risk Management Framework.

Given the centrality of climate change to our business strategy and our public commitment to achieve net zero emissions, we also state a specific ambition regarding climate change:

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 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 2021)
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</p> <p>Creation and reporting of scenario 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 have oversight and challenge</p> <p>Chief Risk Officer and Head of Risk and Compliance oversight</p> <p>Horizon scanning for regulatory and reporting developments</p> <p>Risk Committee and RACE</p>
3rd line	<p>Internal Audit (outsourced function) 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.

We have recently licensed a third-party service which models future physical risks under a range of climate change scenarios. We are embedding this model within our credit assessment process.

- **Transition risk** in terms of the energy efficiency of the property.

For self-build properties, the assessment is based on the designed energy performance (the minimum entry level standard was increased from 85 to 88 SAP points in 2021). For existing properties, the assessment is based on the improvements that will be made to the property, including the installation of appropriate energy-saving measures.

During 2021, 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 2021 were 276.8 tonnes CO₂. This is a 15% increase on our emissions in 2020 (241 tonnes, updated to reflect best available data) which had decreased considerably from the previous year due to the pandemic (338.7 tonnes in 2019). In 2021, our business activity has increased substantially, with new mortgage lending increasing by 77% and the number of savings accounts increasing by 16%.

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 generate around a third 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

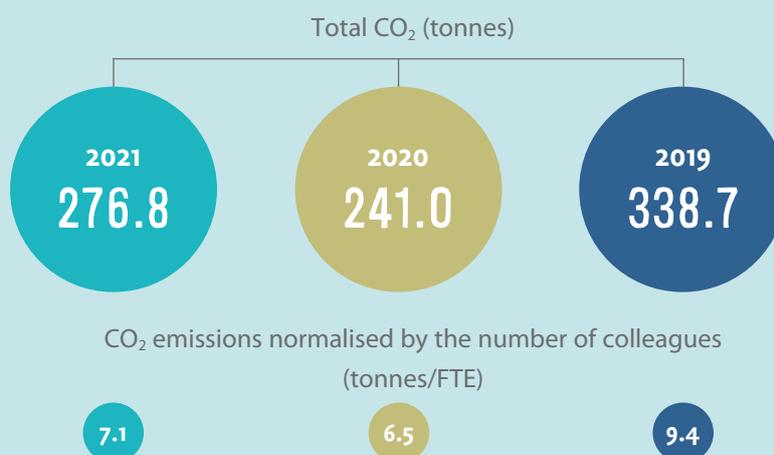


Table 4 Emissions arising from Ecology's business operations, commuting and supply chains in 2021

Scope 1	Emissions (tCO ₂ e)
Gas use at Ecology offices [Note 1]	6.9
Scope 2 (net)	
Electricity use at Ecology offices [Note 2]	0
Scope 3 [Note 3]	
Business services (e.g. information technology)	160.9
Depreciation, maintenance and other utilities	44.7
Office consumables	12.1
Gas and electricity (scope 3)	2.4
Food and catering	1.2
Business travel and accommodation	7.2
Commuting	31.0
Homeworking emissions	10.4
Total	276.8

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 and solar thermal technology on our Silsden office generates around 30% of our annual electricity use. 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 Group when it formed in October 2020 and during 2021 co-chaired the group's 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

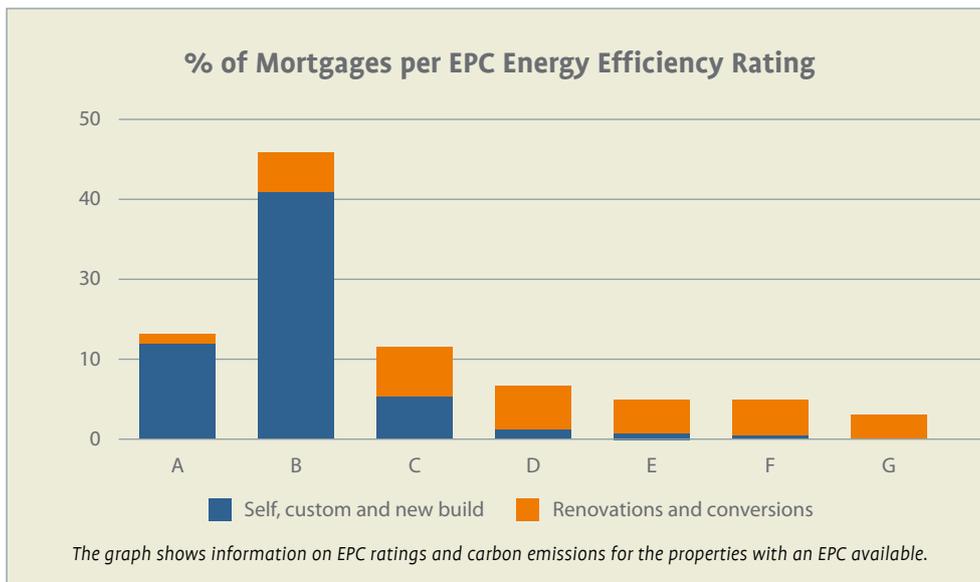
While combining regulated and unregulated emissions gives a complete picture of the emissions, some UK financial institutions have chosen to report only financed regulated emissions, as they are directly influenced by the mortgaged aspects, i.e. the fabric, heating technology and lighting of the property.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

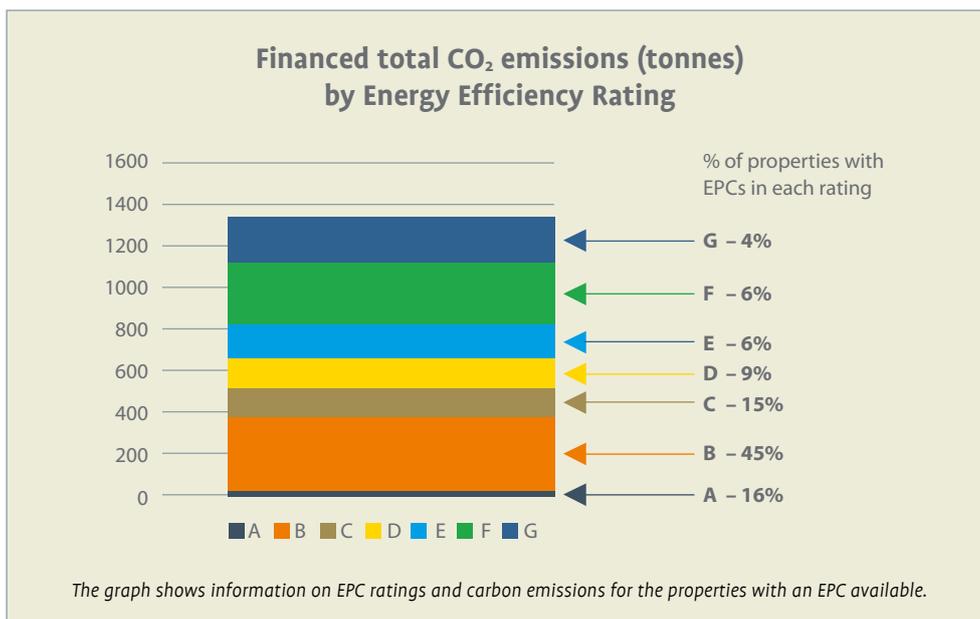
Table 5 Financed emissions for our mortgage portfolio at the end of 2021

Table 5 Scope 3 – Mortgages: Financed emissions					
Emissions from properties with an EPC (47% 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)	56,444	375	510	6.6	9.0
Renovations and conversion (includes all properties where works are complete or ongoing [Note 7])	34,385	749	824	21.8	24.0
Sub total	90,829	1,124	1,334	12.4 (weighted)	14.7 (weighted)
Emissions from properties that are completed but do not have an EPC (24% of Ecology mortgages)					
Emission data quality score 5, based on PCAF Global Standard [Note 8]					
Sub total, all types	41,840	439	541		
Emissions from all new properties where construction works are complete, and all renovation and conversion properties where works are complete or ongoing (76% of Ecology mortgages). Weighted emission data quality score 4.4, based on PCAF Global Standard					
Total	132,669	1,563	1,875		

- 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 physical valuation, rather than the valuation at origination.
- 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 of up 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.



In 2021, for properties where there is an EPC available, 61% of Ecology properties achieved an energy efficiency rating of A or B but only contributed 29% of the carbon emissions. At the lower end, 16% of Ecology properties are rated E, F or G but contribute 51% of the carbon emissions. This demonstrates the significant difference in carbon emissions between properties with higher and lower energy efficiency ratings, which underpins our commitment to target our renovation lending at improving poorer performing properties.

Based on all the EPCs currently available for properties in our mortgage portfolio, the average SAP score was 75, 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 2020 using our latest refined methodology and updated information on the unregulated emissions in 2020. In 2020, financed total emissions were 1899 tonnes and financed regulated emissions were 1603 tonnes. Between 2021 and 2020, our financed regulated emissions decreased by 3% (2021: 1563 tonnes; 2020: 1603 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 2020, the financed regulated emission intensity was 14.7 kgCO₂/£000 and in 2021 this decreased to 12.4 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 2020
14.7 kg CO₂ / £000

Financed regulated emission intensity in 2021
12.4 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 23.6 kgCO₂/m² compared with 25.3 kgCO₂/m² in 2020.

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 2021 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, 9.1% 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 2021, 8% of Ecology's mortgaged properties were in Northern Ireland.

Subsidence

Under the worst case, high emissions scenario (RCP8.5), in the 2050s, 4% of Ecology mortgaged properties in Great Britain could experience an increase of 10% or more in their subsidence risk. 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 very low.

Targets

We have committed to achieve net zero by 2050 for our lending and by 2030 for our business operations. Building on our 2030 strategy published in November 2021, we are currently working on our net zero plan, which will include carbon emission intensity targets to achieve by 2030, as interim milestones on the journey to net zero by 2050.

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. We are working with our third-party consultants to extend the assessment of subsidence and coastal erosion risks to include Northern Ireland. We will continue to refine our risk appetite, moving from a more qualitative to quantitative approach.

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 co-chair PCAF UK, helping to improve the quality and availability of data to measure the emissions from residential property. As described above, we are currently working to establish the science-based targets that our mortgage lending should achieve by 2030. We will publish these interim targets during 2022 as part of our Net-Zero Banking Alliance commitment. We will work with our partners, including Passivhaus Trust and UK GBC, to ensure our target setting is informed by the best available information.

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:

Climate-related risk

Potential negative impacts of climate change

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

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.

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

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

RACE

Risk, Audit, Compliance and Ethics Committee

Regulated energy

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

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.