2022 Climate Report

Putting sustainability at the heart of what we do

do your thing

Contents

CEO Foreword

Climate scientists are ringing the alarm bells louder than ever as heatwaves, fires and floods become more frequent and widespread. This makes us more determined to make the difference for people and the planet, by defining new ways of doing business that align economic growth with positive social and environmental impact. We want to be a banking leader in building a sustainable future for our company, our customers, society and the environment. That's why we're putting sustainability at the heart of what we do.

Steven van Rijswijk, CEO of ING

For ING, sustainability is a key strategic priority. It's also something that I'm personally passionate about. And it's about much more than the environment – there are the many social aspects of helping customers and society stay a step ahead of the challenges they're facing. We focus more specifically on financial health and inclusion alongside our established commitment to climate action. And when it comes to taking action on climate, we're determined to be part of the solution and to inspire others to do the same. First, we aim to set the example by striving for net zero in our own operations and by empowering all colleagues to contribute to company goals. We're also playing a leading role in helping the financial sector to collaboratively develop practical and scalable solutions to decarbonise the global economy. Yet the biggest impact we can make is by using our financing to help our clients align their activities with the Paris Agreement goal to limit the rise in global temperatures to 1.5 degrees Celsius.

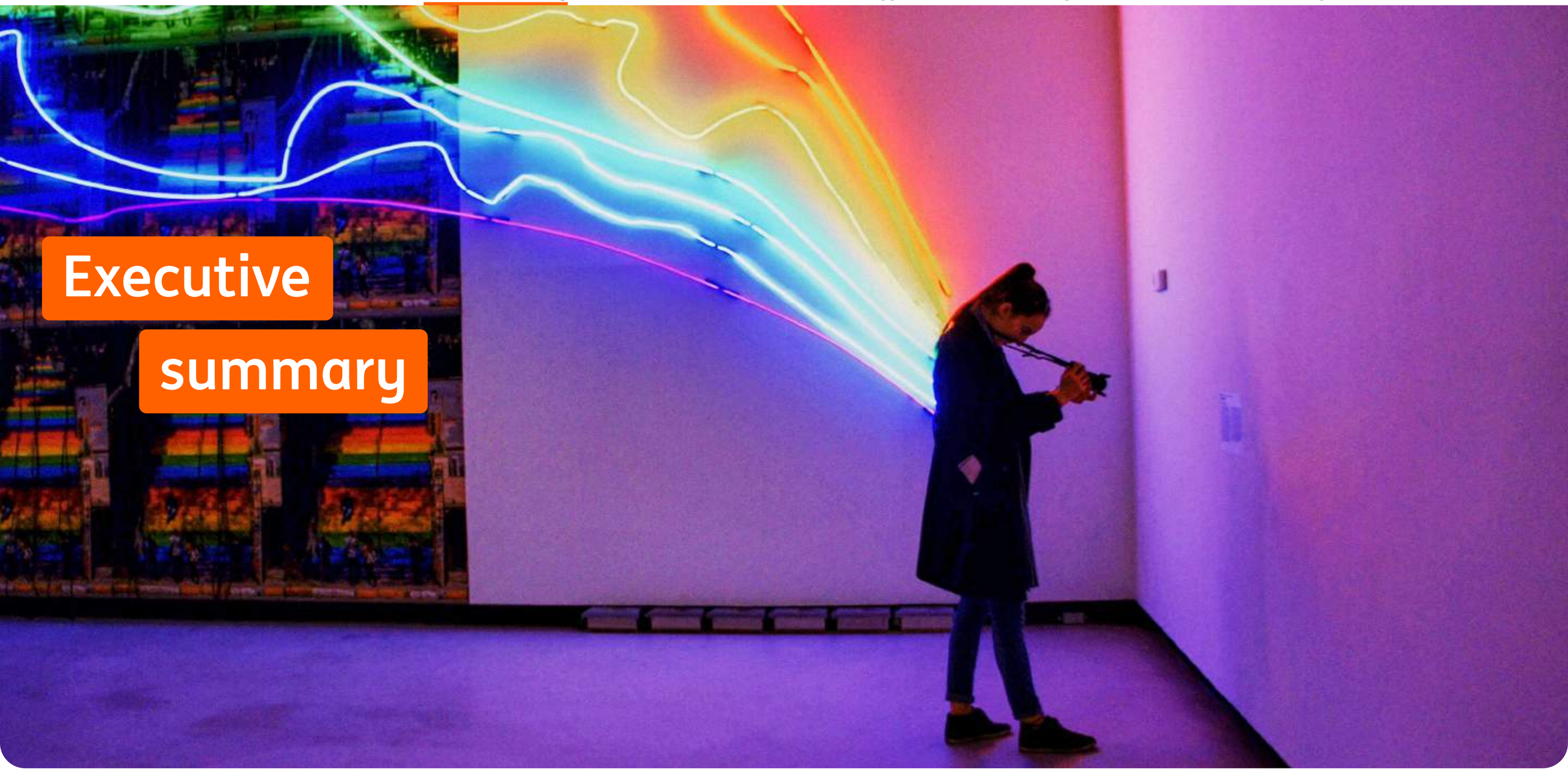
Our clients recognise that sustainability is essential for future-proofing their businesses and operations, and we're here to help them through their transformation and beyond. And although the physical and transition risks of the climate crisis are only growing and are an increasingly important part of our risk management approach, we also see many new opportunities in supporting the decarbonisation of the global economy. For example, the World Economic Forum predicts that by 2030 annual clean energy investments of $4 to $5 trillion will be required to avert a catastrophic climate disaster. Facilitating the necessary investments in new low-carbon technologies and climate-friendly business models is a key part of our Terra approach.

Taking impactful action on climate is a priority for me as CEO. I know we're not perfect and will need to keep learning and improving, but the important thing is to have moved past words to action. In this report we describe the many initiatives underway to align ING with the goal of achieving a net-zero economy by 2050. We also know that 2050 is far in the future and shorter-term targets are necessary to get us there, and so we've set ambitious-yet-realistic green financing targets for 2025 as well as intermediate sector-specific goals for 2030 that match a global emissions decrease of 45% compared to 2010 levels, aligned with climate science.

It's clear that the world needs to drastically decrease its dependence on fossil fuels, so we also need to decide on what not to finance, like our recent decision to no longer provide dedicated upstream financing to new oil and gas fields. When we take decisions like this, we do it in an inclusive way by first having the discussion with our clients. Our starting point is to do what we can to help them improve rather than excluding them altogether. That said, we know that there will be dilemmas to deal with and trade-offs to make.

This report highlights how ING intends to make the difference. It aims to give our stakeholders a balanced overview of ING's climate commitments, our initiatives and the impact we're already making. Of course, the world looks very different now than in 2021 with the war in Ukraine, high inflation and soaring energy prices. Everything that's happening in the world around us makes us even more determined to achieve our goals and become a banking leader in building a sustainable future for our customers, society and the environment. We're proud of the steps we're taking, and the transparency with which we share the progress towards our targets. But none of us can do this alone. For true transformative change to happen, at the increasingly urgent speed it needs to, a concerted collaborative and consensus-based effort across all sections of society is desperately needed. We all have a part to play, and we can all do much more. Let's do it together, before it's too late.

Steven van Rijswijk,
CEO of ING



Executive summary

Executive summary

At ING, we recognise the need, and our responsibility, to take impactful actions to address climate risks and opportunities. That is why in 2021 we set the ambitious goal of aligning our lending portfolio with a net-zero future by 2050 or sooner. This year, we sharpened our path to net zero by setting intermediate 2030 targets for all nine sectors in scope of Terra climate alignment. In this climate report, we share our progress on our path to net zero along with our other climate action objectives.

Reaching net zero in our own operations

Our climate action begins with managing our environmental footprint through our operations and suppliers. In this regard, we have set a mid-term target to reduce scope 1, scope 2, and scope 3 business travel CO_2e emissions by 75% by 2025 compared to our 2014 baseline. To support this target, we have updated our travel policies to encourage the use of trains instead of planes for short-haul business trips. Next to this, we are also adding more on-site renewables at our buildings, including adding solar installations to nine offices in the Netherlands, a rooftop solar installation at our main office in Brussels, and receiving building permission for our first rooftop solar installation in Germany.

Steering our portfolio towards net zero by 2050 or sooner

Our strategy to steer our loan book to reach net zero by 2050 or sooner is operationalised through our Terra approach. We have refined and optimised aspects of our approach through, for instance, joining and leading working groups on steel and aluminium with the aim to develop sector-specific methodologies that can be used to measure and steer financial institutions' portfolios.

Regarding our climate alignment, we are on track with five of our nine Terra sectors, with power generation (-23%) and upstream oil and gas (-15.2%) showing strong performance. Commercial real estate (-9.2%), automotive (-0.8%), and shipping (-6.0%) are all also on track for their respective climate alignment pathways. Residential real estate (3.2%) and cement (4.2%) are within 5% of their alignment pathway, while steel (5.4%) and aviation (57.3%) are not on track. The latter's performance continues to be affected by the impacts of the coronavirus pandemic, although it is beginning to trend back to its decarbonisation pathway as the sector recovers.

To promote immediate action towards decarbonisation and to adhere with our Net-Zero Banking Alliance (NZBA) commitment, we set intermediate 2030 targets for all of these Terra sectors. Of the nine intermediate targets, eight are aligned with net-zero scenarios. A target for shipping will be set as soon as one is adopted under the Poseidon Principles, a financial industry framework for assessing climate alignment for the shipping sector.

And, to align our energy portfolio with the International Energy Agency's (IEA) Net-Zero by 2050 Roadmap, we aim to grow new financing of renewable energy by 50% by year-end 2025 versus year-end 2021. ING does not provide dedicated upstream finance (lending or capital markets) for new oil and gas fields approved for development after 31 December 2021.

Financing and advising clients in line with a net-zero economy

Our involvement in sustainable financing continues to grow rapidly. In 2021 we concluded 317 sustainable finance transactions, which is more than double that of 2020. In the first half of 2022, we were involved in 205 sustainable finance transactions. We have set ambitious sustainable financing targets, such as a goal of mobilising €125 billion in sustainable finance by 2025 for Wholesale Banking and providing €1 billion in annual green financing by 2025 for SMEs and mid-size corporates in the Netherlands.

Managing climate and environmental risks

In the area of climate and environmental risk, there have been several developments. Firstly, our climate risk heatmapping assessment for Wholesale Banking is now complete and covers all Wholesale Banking sectors. These heatmaps categorise physical and transition risk drivers per sector based on a score of low, medium, or high.

Another development was to expand the scope and granularity of our pilot project assessing physical climate risk within our mortgage portfolio to cover 99% of our residential mortgages book. This assessment found that at an aggregated level[1], ING's global mortgage portfolio is in the very low risk category (12/100) and <1% of our global mortgages outstandings score as high risk. Finally, we targeted the integration of biodiversity into our sustainable finance frameworks and strengthened biodiversity considerations into risk assessments.

ING's process for identifying, assessing, and managing climate risks continues to develop. For example, we have updated our credit risk rating policy to include specific requirements for climate-related and environmental risks. This included the introduction of a mechanism to limit the growth of subsectors that have a higher exposure to climate-related and environmental risks, which became binding for Wholesale Banking sectors this year.

In 2022, the European Central Bank (ECB) conducted climate risk stress testing on significant financial institutions within the European Union (EU). Its stress test of ING enabled us to understand where we are performing well and where we are facing challenges. We will apply lessons learned from this exercise to enhance our climate risk capabilities. Further details on how we are improving our integration of climate risk drivers across existing processes can be found in the Risk Management section of this report.

1 Meaning all individual risk drivers together are captured into one overarching score: the so-called 'Summary Climate Risk score'.

Integrating sustainability into our governance structures

Our governance approach enables the implementation of our climate objectives. In 2022, we updated our approach to better reflect our strategic commitment to put sustainability at the heart of what we do. The Supervisory Board now has an Environmental, Social, and Governance (ESG) committee that is responsible for supervising our sustainability direction and advising the Management Board Banking (MBB) on dilemmas. For the MBB, sustainability is a regular topic on their agenda and its members have ESG-related key performance indicators (KPIs) that are cascaded throughout ING's business lines.

To help guide the development and implementation of our sustainability strategy, as well as monitoring and reporting on our progress, we established an ESG Sounding Board. This Sounding Board is comprised of senior leaders across different functions who own ESG KPIs. And, to build a stronger connection between global and local activities, we have established a functional reporting line for Sustainability leads in major countries to the global head of Sustainability, who reports directly to ING's CEO.

Next steps

Approaches to managing climate risks and opportunities are evolving rapidly. We are committed to ensuring that we are actively contributing to, and up to date with, the latest methodologies and approaches in these areas. Looking ahead, for example, we plan to expand our Terra approach to cover more of the carbon-intensive parts of our lending portfolio. We will continue to partner with expert organisations like the NZBA and sector working groups like those on shipping, steel, and aluminium to help standardise the way banks measure their alignment with climate goals. And we will continue to explore further ways in which to link biodiversity, human rights, and circular economy into our approach to climate action.

While we are committed to doing our part, we know that climate action requires everyone to play theirs. Clients, for instance, need to take action. Governments should direct and guide the changes needed, for example, via dedicated policies to reach net zero by 2050. We would like to see regulators working together with the financial industry in further supporting the harmonisation of climate reporting requirements, particularly on climate impact measurement and target-setting. The availability and quality of climate risk and climate alignment data is critically important to the success of our climate approach. We count on, and are working with, third parties and clients to improve the datasets that we use for climate portfolio steering and assessing climate risk.

Snapshot: climate action

on track	**Power generation**
on track	**Upstream oil & gas**
on track	**Commercial real estate**
on track	**Automotive**
on track	**Shipping**
close to on track	**Residential real estate**
close to on track	**Cement**
not on track	**Steel**
not on track	**Aviation**

Set intermediate 2030 targets for all

9

sectors covered under Terra

1.5°C

aligned targets:
8 of the 9 Terra targets already use net-zero-by-2050 scenarios

Conducted physical risk impact asssessment of climate events on our mortgage portfolio and underlying assets, covering

99%

of our residential mortgages book

26

Physical and

7

Transition sub-risk drivers assessed in our climate risk heatmapping exercise covering all Wholesale Banking sectors

Wholesale Banking commitment to mobilise

€125 billion

volume in sustainable finance[2] in 2025

Supported

317

sustainable transactions in 2021, more than double 2020 performance

€1 billion

annual new green financing in 2025 for SMEs and Mid-Sized Corporates in the Netherlands

2 Volume mobilised includes loan products, capital markets, derivatives and advisory propositions that support clients by financing their sustainable activities and the transition to a more sustainable business model. In case of an ESG lead role, the pro-rata share of the transaction is included, otherwise our final take is included.

About this report

Who this report is for

This report is intended to inform all of our stakeholders about ING's approach to climate action. These stakeholders include customers, investors and shareholders, regulators and supervisors, employees, government authorities, and non-governmental organisations. It aims to give these stakeholders a balanced overview of ING's commitments, initiatives, impacts, and other relevant updates regarding our progress on climate action.

How our climate reporting has evolved

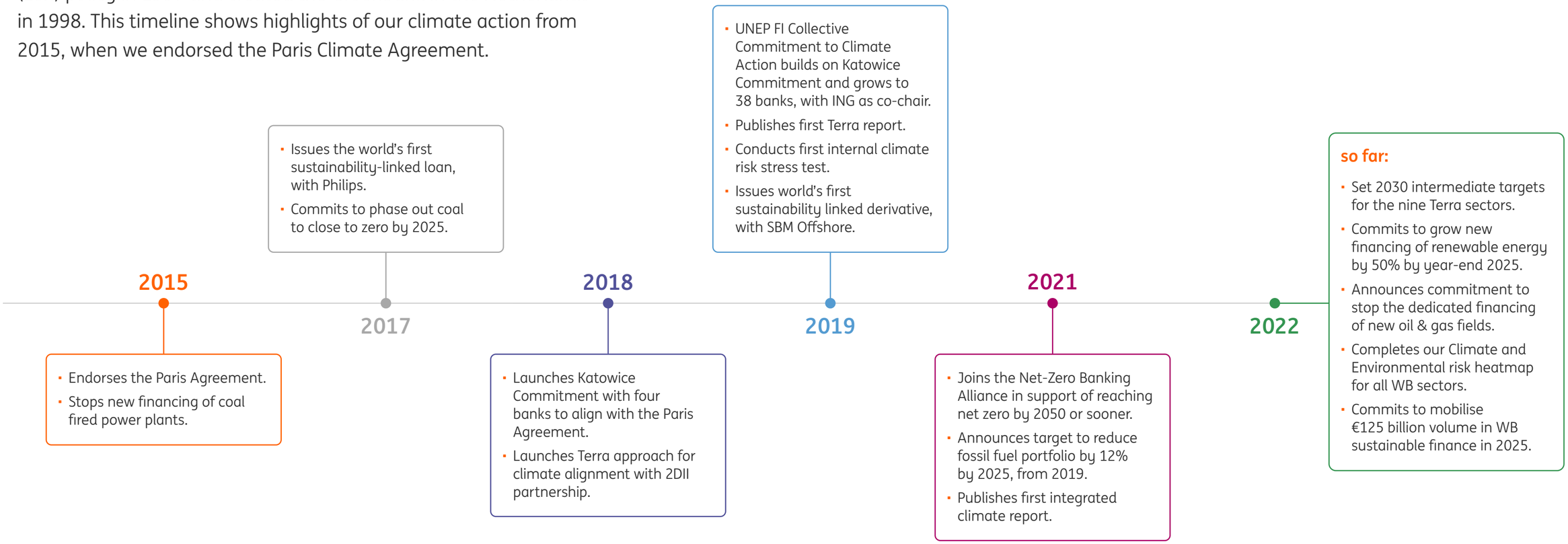
ING has reported on our climate and environmental approach for many years. Since 2017, we have captured our progress on climate risks and opportunities according to the recommendations of the Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures (TCFD) in our Annual Report. In addition, we have reported annually on our Terra progress since 2019, on climate risk since 2020, and combined these elements into an integrated report since 2021. This year, we are aligning our climate reporting structure with the TCFD format in order to support standardisation and comparability across the financial sector.

We continue to adapt our approach to climate-related and environmental disclosures as we build on our expertise in measuring and quantifying climate metrics, and in line with evolving regulatory and methodological developments.

Additional disclosures are available at https://www.ing.com/Sustainability.htm
We welcome reactions and views, which can be emailed to sustainability@ing.com

Our climate action milestones

At ING, we have been taking climate action for many years. For example, we launched our first Environmental and Social Risk (ESR) policy in 1997 and created the Groenbank in the Netherlands in 1998. This timeline shows highlights of our climate action from 2015, when we endorsed the Paris Climate Agreement.



Governance

Introduction

Our new ESG governance approach

ING initiated its climate governance structure in 2018, when we established a Climate Change Committee (CCC) to provide Management Board-level oversight of strategic climate-related risk and opportunity management. The CCC was Chaired by the Group chief risk officer (CRO) and co-chaired by the board member responsible for Wholesale Banking. It was mandated to oversee and set priorities for implementing the recommendations of the TCFD, as well as other strategic climate-related topics that impact the group.

In March 2022, in line with our commitment to put sustainability at the heart of what we do, we updated our governance approach. The main purpose of updating the governance was to integrate and align our ESG governance with the existing business-as-usual governance of the bank. By doing this, we want to ensure that ESG is shared, steered, and accounted for at different levels of the bank. This new governance setup allows us to holistically steer across ESG themes like climate, biodiversity, human rights, and financial health.

Our global head of Sustainability reports directly to ING's CEO. Sustainability/ESG leads in major countries have a functional line to the global head of Sustainability in order to create a stronger connection between global and local actions. All MBB members have ESG-related key performance indicators that are cascaded through the business lines. ESG has become a regular topic on the MBB agenda, and we no longer have separate steering committees such as the Climate Change Committee. An ESG Committee has been created at the Supervisory Board level, responsible for supervising our direction as well as endorsing and monitoring progress and advising the MBB on dilemmas.

ING has also created an ESG Sounding Board comprised of senior leaders who own ESG KPIs. This Sounding Board helps to guide the development and implementation of our strategy for ESG topics as well as monitoring and reporting on our progress. The Sounding Board is organised by Group Sustainability, who co-chairs it with the newly formed ESG Risk Centre of Expertise, discussed below.

We believe our new ESG governance approach supports a future-proof ING and drives long-term value creation; it makes action on climate change a strategic priority and an integral part of ESG. These changes provide clearer ownership and leadership on ESG topics, increasing our effectiveness, efficiency, and accountability as we strive to be a banking leader in building a sustainable future for our company, our customers, society, and the environment.

ESG risk governance

ESG risk governance at ING is mainly managed via three risk functions: Environmental and Social Risk (ESR), Climate Risk, and the ESG Risk Centre of Expertise. They are described in detail below.

Environmental and social risk

Environmental and social risks are governed through our ESR department, whose reporting line is to ING's CRO.

The ESR function encompasses the following activities:

- Create and maintain policies for sensitive industry sectors.
- Assess transactions for environmental and social risk.
- Monitor high-risk clients to ensure compliance with sustainability criteria.
- Spread ESR awareness throughout ING.
- Participate in European and global advisory groups (i.e. OECD advisory group, steering committee to the Equator Principles, Thun Group of Banks) to help bring all banks to the same high standard.

This function is responsible for setting ING's ESR framework, which helps us make transparent choices about how, where and with whom we do business based on an assessment of environmental and social risks in those business areas, among other factors. This framework applies to all ING business lines and the primary responsibility for its application lies with the business lines. They act as the first line of defence, identifying environmental (including climate) and social risks and impacts at transaction level. Using screening processes such as client and transaction ESR assessments, business lines will help determine compliance with the applicable ESR sector policies and work with the credit risk managers and the ESR team, who act as a second line of defence, to assess and mitigate such risks to be within our risk appetite.

The ESR function also develops environmental and social policy and procedures and takes the lead in communicating them internally and in training internal stakeholders. It performs an advisory role to support the deal principals, senior credit officers and approval authorities on individual transactions. The degree of the ESR function engagement in transactions is dependent upon the risk profile of the project and ING's exposure. In some locations an ESR delegated advisor may be appointed if mutually agreed by the head of ESR and regional head. Such a role would support the senior credit officer (SCO) who would be responsible for ESR issues in the region.

Committees involved in managing environmental and social risks include the Global Credit and Trading Risk Committee (GCTP) and the Global Credit Committee for Transactions Approvals (GCC-TA). The GCTP approves the policies, methodologies and procedures related to ESR. The GCC-TA approves transactions that entail taking higher environmental and social risk.

Climate risk governance

In addition to the ESR governance, in accordance with the ECB's Guide on climate-related and environmental (C&E) risks, in 2020 ING established the Climate Risk Initiative (CRI). CRI is a programme aiming to address C&E risks across our organisation.

The Climate Risk Initiative is sponsored by the CRO and overseen by a Steering Committee. Within the programme, 12 workstreams are responsible for implementing regulatory requirements such as risk identification, business strategy and governance, risk appetite,

and external disclosures. Workstreams for Wholesale Banking and Retail Banking are responsible for implementation in the business lines and country organisations.

The governance of the programme was strengthened in early 2022 by extending the composition of the Steering Committee to include a broader representation of the Wholesale Banking and Retail Banking business lines, the first and second lines of defence of the Risk domain and an observer role for the internal audit function – the third line of defence.

On top of strengthened governance, we also installed a permanent Climate Risk Centre of Expertise within our Group Sustainability department. This core team supports the workstreams in the delivery of their roadmaps and reports to the programme's Steering Committee and internal and external stakeholders on progress. Next to supporting the programme, the Centre of Expertise will also cooperate with the ESR department of ING's Risk function to continuously embed C&E risk management practices across the organisation.

ESG Risk Centre of Expertise

After a strategic review of our risk organisation structure this year, we decided to establish an ESG Risk Centre of Expertise that will be part of the integrated risk department and report to ING's CRO. This Centre of Expertise will ensure that ESG regulations are tracked, assessed, and implemented in accordance with the expectations of supervisors and society. It will be responsible for developing the overarching ESG risk framework and policies, setting Risk Appetite Statements, and reporting on them, as well as coordinating internal and regulatory ESG risk stress testing and scenario analysis.

ESG opportunities governance

For Wholesale Banking, driving ING's sustainable finance business sits within Sustainable Finance, whose reporting line is to ING's Wholesale Banking CEO. This team operates as a centre of expertise for engaging and advising clients and executing transactions together with exploring possibilities to innovate by mobilising teams across the organisation: sustainable lending, debt capital markets, corporate investments, project finance and advisory business. For Retail Banking, the innovation of green products and the execution of sustainable finance transactions are steered through the recently set up Retail Banking Sustainability Steerco and the Business Banking Sustainability Steerco who cascade this responsibility to the relevant experts and country teams as needed.

ESG-linked remuneration

ING aims to align its remuneration policy with its risk profile and considers the broader interests of all stakeholders. To that end, targets in areas such as customer centricity, risk and regulatory, sustainability, and people, are just as important as financial results. At least 50% of our Executive Board's variable remuneration metrics are based on non-financial targets, including climate-related targets. For 2022, we have created an ESG variable remuneration target area that incorporates sustainability, risk and regulations, and people metrics.

In 2022 the following sustainability targets are taken into account for the Executive Board's variable remuneration:

- Increase the level of sustainable loans.
- Develop and introduce sustainable products for our retail customers.
- Reach net zero emissions for ING's own footprint.

For all other eligible staff, variable remuneration is awarded based on criteria for the Group as a whole, for the business line and for individual performance. As with the Executive Board, at least half of these targets are based on non-financial performance and include ESG targets used in the determination of Group and business line variable remuneration pools for the wider workforce. To ensure their independence, no variable remuneration is provided to Supervisory Board members.

Upskilling and empowering our organisation

Putting sustainability at the heart of what we do means ensuring that our employees are highly engaged on the topic, especially climate action. We seek to equip our employees with the relevant knowledge, skills, and mindset to put sustainability into practice within and outside of the workplace. To that end, ING is building an updated global sustainability learning programme to be delivered in 2023 and will be required for all employees. There are two levels of proficiency:

Foundation level

At the foundation level, we will empower colleagues across ING to contribute to our sustainability direction, with a focus on climate action. An e-learning will explain the importance of ING's sustainability direction to each of us and why ING has made certain choices on its sustainability direction. To achieve lasting behavioural change, the training will enable colleagues to take sustainability into account in their daily work. This learning is mandatory for all colleagues and will be complemented by on-demand micro-learning.

Expert levels

Where our employees require more breadth and depth of skills, we are developing learning plans for specific role groups. For the expert level, we need to equip our leaders and strategic business partners to influence policies and processes in ING and lead

dialogues and coalition-building. We will also cover our new ways of working to assist our customers and society to transition, and to enable our leaders to empower their teams. Local initiatives are encouraged and coordinated.

More content will be added to learning channels by topic, such as introductory videos on climate risk, created in cooperation with the Dutch Banking Association (NVB). To ensure the effectiveness of this training, we have selected best-in-class vendors to partner with us, have expert colleagues collaborating across ING, and have a clear evaluation programme aligned to business and societal impact. Additional training opportunities on sustainability-related topics will also be available such as human rights, biodiversity and financial health.

Strategy

Our approach

At ING we take the call to climate action seriously. By putting sustainability at the heart of what we do, we are defining new ways of doing business that make our planet and its people just as important as economic growth. We recognise that sustainability is an essential part of running a business. Being sustainable is about the choices we make – in our own operations, our financing, and in the services and products we offer to our customers. We take a holistic approach to sustainability, which means that climate change mitigation, climate adaptation, climate and environmental risk, biodiversity, human rights, financial health, business ethics and other ESG issues are in scope.

In practice, this means that we strive for net zero in our own operations, while in parallel steering our financing towards meeting net zero by 2050 and supporting the smooth transition to a low-carbon society. As biodiversity and human rights are closely linked to climate change, these are also in focus for the transition we aim to support. This also means that we must identify the risks that climate change, biodiversity, and human rights pose to our business. Sustainability issues impact our business, and we work to assess these risks and take action to mitigate them across our business relationships.

ING is committed to sharing the progress on our targets and wholeheartedly supports the role of organisations and alliances to promote transparency in reporting. Transparency, clarity and uniformity will drive accountability and accelerate action.

We therefore welcome the regulatory developments in this regard. We are pleased to see more concrete guidance from governments and regulators on climate risk and climate adaptation. We are eager to see further harmonisation of reporting requirements, including alignment with requirements on climate impact measurement and target-setting.

By putting sustainability at the heart of what we do, we focus on ensuring that the progress we make, the policies we set, and the actions we take, have a positive impact in the real economy.

Our climate action objectives

ING has the following strategic priorities which comprise our integrated climate approach:

1. Reach net zero in our own operations.
2. Steer our portfolio towards net zero by 2050 or sooner
3. Finance and advise clients in line with a net zero economy
4. Manage climate and environmental risks

We highlight our progress on each of these strategic priorities in turn below.

Our integrated climate approach

Our ambition

Empower our clients and business to reach net zero by 2050 or sooner

Our convictions

- Climate change is a major threat to the environment and biodiversity
- It can impact human rights and wellbeing
- It's also a business imperative and opportunity
- A major energy transition is required to reach net zero
- An inclusive and proactive approach is needed to change the real economy

Our objectives

- Reach net zero in our own operations
- Steer our portfolios towards net zero by 2050 or sooner
- Finance and advise clients in line with a net zero economy
- Manage climate and environmental risks

Core initiatives

- Environmental programme
- Terra approach
- Sector alignment targets and steering
- Sector finance
- Sustainable finance and advisory
- Circular economy approach
- Sustainable insights by ING Research
- Environmental & Social Risk Framework
- Climate Risk Initiative
- Biodiversity approach

Our enablers

- Improved climate data analytics & operational integration
- Faster innovation on sustainable products & services
- Upskilling & empowering our organization on ESG
- Effective climate governance & performance culture
- Collaborating for joint climate impact

Reach net zero in our own operations

Our Environmental Programme

Our aim of contributing to a healthy planet begins with our own operations and our own employees. This means bringing our buildings, data centres, and business travel in line with the net-zero economy of the future. We measure and steer our progress towards this through our Environmental Programme. Its steering committee includes the chief technology officer and chief operations officer. In 2020 and 2021, our footprint continued to be impacted by Covid-19 related restrictions to both buildings and travel. As we adjust to the new normal, we have set a new mid-term target for 2025 to reduce our CO_2e emissions by 75% compared to our 2014 baseline. We have previously shared a scope 1 and scope 2 target for 2030 of a 90% reduction by 2030, where we plan to review this ambition and come with a combined target for scope 1, scope 2 and scope 3 for business travel by 2030.

Business travel

For business travel, our strategy focuses on reducing our air travel, and procuring increasing amounts of Sustainable Aviation Fuel (SAF) as a measure to limit the impact of remaining flights. We recently launched our Green Travel Budget programme, where managers and colleagues are made aware of the CO_2 impact of their travel choices and encouraged to find greener options. We have also updated our global travel procedure to restrict most air travel on short-haul distances where high-speed rail options exist as alternatives. This includes travel between Amsterdam, Brussels, London, and Frankfurt.

In 2022, we are working on procuring SAF to be used by airlines, that will create an in-sector emissions reduction for our flights. We aim to increase our use of SAF in the coming years.

To limit the impact from our car travel we focus on electrifying our fleet of leased cars. Recently ING in Belgium and the Netherlands announced that from late 2022 only fully electric vehicles (EVs) will be available in our range of new lease cars. Together, Belgium and Netherlands represent 72% of our total number of lease cars. Globally, we have set an ambition to reach at least 90% EVs in our fleet by 2030. This ambition encourages countries like the Netherlands and Belgium to reach 100% earlier, while accounting for EV infrastructure challenges in countries like Poland, Turkey, and Romania.

We are exploring additional categories of scope 3 emissions that we can report on in addition to business travel, such as reporting on commuting, working from home, and franchises. A review of these categories is planned for late 2022.

Buildings

For our building emissions, our strategy focuses on improving their energy efficiency and moving towards district and electrified heating systems. This year we have completed a net zero assessment on our major buildings in partnership with CBRE, which will form the basis of a new sustainable real estate strategy.

Since 2014, ING has focused on increasing the amount of renewable electricity sourced for our operations. This resulted in us reaching 100% for the first time in 2020 and

maintaining this in 2021 for owned and managed buildings, including the use of Guarantees of Origin (GoOs), Renewable Electricity Certificates (RECs), and other kinds of Energy Attribution Certificates (EACs). 99.7% of this sourcing in 2020 and 99.2% of this sourcing in 2021 was aligned with the RE100 market boundary criteria. Over 80% of ING's total electricity consumption footprint can be traced to our larger retail markets, such as the Netherlands, Belgium, Poland, Turkey, and Germany, where our primary electricity sources are from green energy products with energy suppliers.

In many locations and countries, particularly those where ING does not maintain management control over buildings, we procure GoOs, RECs, or other kinds of EACs which represent the environmental attributes of the generation of one megawatt hour (MWh) of electricity produced by renewable sources. EACs are market mechanisms that are recognised under government frameworks and RE100 guidelines. We acknowledge that over time we should move towards more on-site renewables and direct purchasing agreements from local renewable projects, such as wind, solar power, geothermal and hydropower. This shift has already started for some years in many of our markets, and we are planning to quantify milestones in this transition to guide our progress in years to come. More information about the shift in our major markets and our alignment with RE100 market boundary criteria can be found in the Metrics and targets section of this report.

We plan to start monitoring and reporting on additional data around our use of EACs. This includes, for example, the year in which the source of the EACs was constructed.

Climate contributions

Along with our work in reducing our emissions, we make proactive climate contributions. Since 2007, we have been purchasing voluntary carbon units for all of our remaining carbon emissions. We do not count them in our emissions reduction. This year we have conducted a review of our approach to climate contributions, including a review of external partners and projects available in this space. Following this review, we plan to release an updated approach by the end of 2022. This evolving approach accounts for the need to continue focusing on protecting and building nature-based solutions, including biodiversity impacts, how to ensure the quality and additionality of compensation measures, and the role of new and emerging carbon capture technologies.

Further details on our environmental programme strategy and performance are found on ING's website.

Steer our portfolio towards net zero by 2050 or sooner

Following the path to net-zero with Terra

The biggest impact we can make is through our financing. Having officially endorsed the Paris Agreement in 2015, we have committed to steer our portfolio in line with climate goals. Since 2018, ING has used the Terra approach to help realise this commitment. The Terra approach, which is the name of ING's strategy for climate alignment, focuses on nine sectors in our loan book that are among the world's most carbon-intensive industries. Terra measures how each sector is doing in reaching ING's climate alignment goals. However, with Terra, we also calculate the targets our sectors must meet to achieve emissions reductions. As ING has committed to steering towards net zero by 2050, the Terra approach has been instrumental this year in setting new targets that will help us steer our portfolio towards net zero by 2050, improving our previous commitment and targets of well-below two degrees.

In practice, steering means engaging with our clients to make the tangible changes needed to decarbonise the economy. As financier, we play a critical role in helping them achieve this. Next to financing, we aim to provide corporate clients with actionable data-driven insights on their emissions trajectory benchmarked against their sector's climate pathway with the purpose of supporting their decarbonisation journey. For residential mortgages, we encourage our customers to take greening measures through products we offer. However, to reach net zero in residential housing, we need governments to step in and set clear timelines for energy efficiency measures as well as recognising the social impact by supporting an inclusive transition.

Steering our portfolio also sometimes means saying 'no' to financing certain activities. In 2017, we pledged to exit coal-fired power plants by 2025 and have since decreased our exposure by 80%. In March 2022, we announced our decision to stop the dedicated upstream financing of new oil and gas fields approved for development after 31 December 2021, aligned with the IEA's Net-Zero Emissions by 2050 Roadmap.

Enhancements to our Terra approach

We are pleased to share that we set intermediate 2030 targets for all nine sectors covered in Terra, on top of their long term 2050 targets. Of these targets, eight are already in line with net zero scenarios, while, for for shipping, a target will be set as soon as one is adopted under the Poseidon Principles. Please see the Metrics and targets section of this report for more details on our increased ambitions.

To leverage our impact in tackling climate change, we are actively involved in strategic partnerships. In 2022, we became the first European partner of RMI's Center for Climate-Aligned Finance (CCAF), a leading expert platform committed to driving the harmonisation of climate alignment efforts. As an example of our collaboration, ING leads the Sustainable STEEL Principles (SSP) Working Group, facilitated by the CCAF. Replicating the success of the Poseidon Principles in the shipping sector, the SSP Working Group created a credible and widely accepted measurement and reporting methodology for assessing the degree of climate alignment of steelmakers and financial institutions' steel portfolios. With such efforts, we aim to

support standardisation in the market as well as providing tools to steer towards net zero by 2050. The progress of this initiative has already been incorporated in our Terra approach.

Further to these efforts, we are striving to expand the scope of Terra. We are, for instance, leading a new working group on Aluminium, also in this case facilitated by the RMI's CCAF, aimed at developing a framework to measure and decarbonise this sector. Additionally, we are exploring ways to further expand our Terra approach to other sectors and products, and we will pursue our contribution to methodologies development and refinements, focused on making a tangible impact in the real economy.

ING is committed to transparently reporting on the progress of our climate targets. We believe that transparent, clear, and uniform reporting supports accountability and action. To this end, this year's report introduces new visualisations to transparently show how our sector profiles evolve from year to year. At the same time, we welcome regulation on climate alignment, which will help in harmonising reporting standards and ensuring the robustness of data disclosures. We would like to see regulators working together with the financial industry in further supporting the harmonisation of climate reporting requirements, particularly on climate impact measurement and target-setting.

Finance and advise clients in line with a net-zero economy

Sustainable finance and transition finance

Our approach

The shift to a more sustainable global economy is gaining pace as governments, consumers, businesses, and investors realise the need for climate action. There are various factors driving this upswing in momentum, including: regulatory initiatives supporting a surge in government pledges to become net-zero economies; a rapidly increasing demand for ESG-themed assets (under management) by investors; and stricter regulations on ESG reporting and disclosure, which makes companies more aware and focussed on reducing their environmental impact.

Sustainability has become a key strategic topic for most companies with a recent ING study showing around 70 percent of companies accelerating their sustainability activities. As companies embark on the road to net zero, the role of financial institutions needs to adapt and evolve to help clients navigate this changing environment. This needs a combination of traditional banking knowledge of how capital streams work, along with in-depth knowledge of the investments companies can make and how they can change their business models to become more sustainable. To achieve real change, cooperation between companies and their banks is crucial.

Supporting our clients in the acceleration of their sustainability activities

The Sustainable Finance team is part of Wholesale Banking and advises clients on translating their sustainability ambitions (including alignment to net-zero where applicable) into their financing, through sustainability-linked structures, providing green and social financing solutions, ESG rating advice, and other strategic ESG advice.

The team supports a range of clients in achieving their sustainability goals: from those with a strong sustainability track record, an ambitious agenda, or that are addressing resource scarcity and seeking financing for sustainable deals in renewable energy, green buildings, waste management or water. We've financed billions of euros in energy projects, from wind farms, solar energy, and geothermal power production; to energy efficiency in buildings and production lines; to electric vehicles and bio-based plastics; to wastewater treatment and circular economy solutions. This supports our approach to climate action. We also finance deals that make a positive social impact, such as social covered bonds and projects such as schools, hospitals and social housing.

Our sustainable finance approach can be divided in the following main categories, outlining the part they play in the road to sustainability:

Accelerating the green economy

We seek to fund significant growth in our green asset portfolio that will accelerate the green economy. Green financing solutions such as green bonds and loans form an integral part of our sustainable finance strategy as they are used to fund specific green or sustainable projects. For instance, we structured a green loan for Italian real estate investment fund Coima RES for the re-financing of a portfolio of office properties in Milan. As the buildings are best-in-class regarding their energy consumption, they comply with the strict requirements of the EU Taxonomy for environmentally sustainable buildings.

Financing the transition

To support clients who are shifting to more sustainable business models, we incentivise them to achieve certain sustainability milestones. We do this through our sustainability-linked financing solutions. This is a way of providing innovative solutions that can help companies address their most material sustainability risks, including transitioning to a low-carbon business model. In 2017, ING coordinated the first syndicated sustainability-linked loan. This loan was for Philips and linked to the improvement of Philips' Sustainalytics ESG rating. In 2022, ING was the sustainability coordinator for turning this loan into a sustainability KPI-linked loan with KPIs aligned with Philips' sustainability goals for lives improved, lives improved in underserved communities, circular revenues, and operational carbon footprint.

As the originator of the sustainability-linked loan, we feel a responsibility to keep standards high for the use of this product. In September 2021, we published a position paper outlining the crucial elements that must be considered to protect the credibility of the sustainability-linked loan market.

Social financing

Our sustainability efforts are also directed towards the social aspects of helping customers and society stay a step ahead of the challenges they are facing. As an example, ING acted as joint lead manager, joint bookrunner and joint social structuring advisor for Singapore based healthcare real estate investment trust First REIT's S$100 million social bond. This social bond is guaranteed by the Credit Guarantee and Investment Facility, a trust fund of the Asian Development Bank. This issuance marks the launch of Singapore's first-ever healthcare social bond. The proceeds of this guaranteed social bond will be used to refinance existing debt, as well as to finance the ownership, and the management and maintenance of its healthcare related assets in Indonesia.

Pioneering for the future

We advise clients who we can support in taking a step ahead with their sustainability ambitions and anticipating the future economy. Some innovative technologies, business models or client propositions have a higher risk profile that is not yet suitable for a standard financing solution. This is where ING Sustainable Investments helps clients with their sustainability goals by providing more risk-bearing capital through a wide range of tailor-made financial solutions, including equity investments and subordinated debt. Our Sustainable Structured Finance team can also support clients by functioning as a laboratory for new sustainable technologies and business models in need of financing within the EMEA region. The team is involved in the origination, structuring and execution of structured finance transactions, with the focus on circular economy, bio-chemicals, waste and water or any other project supporting sustainable development.

This team also provides financing solutions to smaller scale renewable energy projects in the Netherlands, such as the 'ZonnepanelenDelen' (ZPD), a solar financing platform which offers non-recourse project finance between €200,000 – €5 million to small-to-medium sized solar power projects undertaken by SMEs and project developers. At the same time, the company provides retail investors the opportunity to make a sustainable investment in these projects based on standard documentation. We helped ZPD to upscale their platform and accelerate its growth strategy.

Advisory services

Besides financial support, we support our clients to navigate through the rapidly changing landscape of regulation and advise on their net-zero strategy. Clients benefit from our deep and broad experience in helping other companies in this regard. Some of our clients are ahead of the curve: for them we act as a sounding board, alongside our financial role. Other clients are at the early stages of their sustainability journey. For these clients we provide guidance based on our market experience and suggest areas where they can make impact to become aligned with climate pathways and their peers. Through teaming up with the relevant capital structuring and advisory departments, we also advice on financing corporates' CAPEX and M&A (selling non-sustainable assets, buying sustainable assets).

Next steps

We are committed to supporting our clients in their sustainable transition through our financial offering and our advisory. Despite volatile markets, high inflation and geopolitical unrest, we managed to mobilise over €40 billion for our clients in the first half of 2022. This year, we set an annual target to support our Wholesale Banking

clients in their sustainability transition by committing to mobilise €125 billion of sustainable finance per annum by 2025 (from €87.7 billion in 2021). We provide more details on how we calculate the volume mobilised in the Metrics and targets section.

Next to our Wholesale Banking efforts, we are also increasing our focus on SME and Mid-corporate clients. We are expanding the number of markets offering sustainable loans to this customer segment, including Netherlands, Belgium, Romania, Poland, Turkey and Luxembourg. These products include green loans, green lease financing, and sustainable improvement loans.

Biodiversity

The world is currently experiencing dramatic and accelerating biodiversity loss caused largely by human behaviour. Considering the tremendous capacity of healthy ecosystems to capture carbon, protecting and restoring nature is a way to address climate change. To restore biodiversity to acceptable levels, the world needs to urgently mobilise substantial amounts of funding for nature conservation; it also needs to transform operations and supply chains across industry sectors. The gap between current funding and what is needed on average per year to protect the most important biodiversity and its services, is known as the global biodiversity funding gap, and currently stands at $711 billion.

At ING we believe we have a role to play in protecting biodiversity, and that as a bank we can best do this by shifting financial flows toward nature-positive outcomes. By doing so we also contribute to the goals of the United Nation's (UN) Global Biodiversity Framework. One way we help reduce negative impact on biodiversity is by supporting clients to reduce their pressures on nature through the five direct drivers of biodiversity loss as identified by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). These are, in descending order of global impact:

1. changes in land and sea use;
2. direct exploitation of natural resources;
3. climate change;
4. pollution and
5. invasive alien species.

With our sustainable finance offerings we already focus our attention on some of these drivers. For instance, as the agricultural sector is one of the largest users of land in the world, it has significant potential to contribute to addressing the challenges of biodiversity loss. Our clients realise this and increasingly commit to practices and initiatives that support the preservation of biodiversity. These commitments gradually find their way into sustainable financing frameworks whereby our clients are rewarded for their biodiversity efforts. This development is visible in various industries and across the supply chain, but mostly concentrates around land use change, use and exploitation of natural resources and climate change. Examples include an increasing level of agricultural commodities supply chain traceability (land use change), flower strip planting alongside agricultural lands to stimulate crop diversity and biodiversity monitoring (use and exploitation of natural resources), and reduction of the ecological footprint.

We also see more attention with our clients to secure funding for specific projects that reduce pressures on biodiversity and protect and conserve nature. In this area we have started to help our clients by structuring Green Bond Frameworks through which projects can be financed that, for example, relate to combating desertification, soil pollution and deforestation. Within these frameworks, projects can also be financed that concern the preservation of nature, including the conservation and monitoring of endangered species.

Connecting sustainable finance directly to biodiversity protection and restoration is not common in the financial market. We are proud and excited to do pioneering work in this area and are looking forward to many new opportunities to work with our clients to protect and restore biodiversity.

Further information on our approach to managing biodiversity risks can be found in the Managing climate and environmental risks section of this report.

Circular economy

Our approach

In fighting climate change, there is a huge focus on the transition to renewable energy and activities related to energy efficiency. However, these measures can address just 55% of emissions, according to the Ellen MacArthur Foundation, a circular economy charitable organisation.[3] The remaining 45% can only be tackled by reducing the production of cars, clothes, food, and other products we use every day. To address this, we see the circular economy as an important means to reach global climate goals, while at the same time preventing pollution and harmful impacts on biodiversity.

Advancing the circular economy is a fundamental step towards achieving the Paris Climate Agreement goals as well as the UN Sustainable Development Goals. The European Commission (EC) recognises that the transition to a circular economy is one of the main building blocks of the European Green Deal and has set up the EU New Circular Economy Action Plan (CEAP), which aims to reduce the EU's consumption footprint and double the EU's circular material use rate in the coming decade. This means making products more durable, reusable and reparable, making more use of recycled materials and increasing recycling capacity.

As transitioning to a more circular economy is becoming a priority for many of our clients, it is also part of our integrated climate approach. We support our clients by financing circular business models and activities and by focusing on those value

3 Ellen MacArthur Foundation, 2021, 'Completing the picture: how the circular economy tackles climate change', https://ellenmacarthurfoundation.org/completing-the-picture

chains that use the most resources and where the potential for circularity is high, such as plastics, packaging, construction, textile, batteries and vehicles and electronic equipment.

Our progress

We offer the following finance solutions to fund the circular activities of our clients:

- **Sustainability-linked products** such as sustainability-linked loans or bonds. We incentivise our clients to achieve certain 'green milestones', which relate to circular ambitions. For example, we structured a sustainable finance framework for German chemicals and consumer goods producer Henkel, including an important KPI for increasing the use of recycled plastic in all their plastic packaging.
- **Green loans and green bonds** whereby proceeds from the loan or bond are fully dedicated to the financing or refinancing of circular projects or assets. One example is a green loan we structured for Green Group in Romania, the largest integrated recycling park in Europe, focusing on the recycling of polyethylene terephthalate (PET) plastic, glass and electronic equipment waste. We also created a green finance framework for corrugated packaging company Smurfit Kappa Group, which reflects their sustainable and circular business model. This is one of the first bonds in the market (and a first for ING) where circularity is the main theme.
- **Financing new circular business models.** We see a rise in new circular business models, such as sharing, or product-as-a-service, as well as the emergence of new technologies. With regard to circular economy and new technologies, ING focuses largely on the chemical recycling of plastics. In April 2022, ING was one of several Dutch financial institutions to invest €90 million in technology company Avantium, which is building the world's first polyethylene furanoate (PEF) bioplastic factory; PEF bioplastic is a more sustainable alternative to the fossil-based PET plastics used for bottles and packaging.
- **Enhancing collaboration across the value chain.** Choices made in the upstream part of a company's value chain have consequences for the downstream part. For example, is a product designed with repair or recyclability top of mind? ING supports clients by taking a lead role in enhancing collaboration across the entire value chain. In a recent case, we leveraged our network to support clients in the textile sector to achieve their sustainability and circularity goals.

We see the role of circularity in sustainable finance transactions continuing to grow, as well as the number of transactions themselves. This is driven by changing consumer demand as consumers become more aware of companies' sustainability efforts. Changing regulations arising from the EU's CEAP, introduced in March 2020, are also a driver. The EC is currently working on an extension to the EU Taxonomy, in line with the CEAP, with more detailed technical screening data. This data will make it clear which economic activities contribute to a transition to circular economy and, equally important, the associated thresholds in labelling an activity 'circular'. This extension is expected in the second half of 2022 and will come into effect from 1 January 2023. It will create more clarity on what we can call 'circular' which in turn will help with the allocation of green funding to circular activities.

Financial health

We believe financially healthy people contribute to a healthy economy and drive social progress. Financial health also has close ties to people's ability to take action on climate. The costs of climate change are unequally divided, with the financially vulnerable being highly exposed and impacted[4]. As a bank, there are several ways we work to improve people's financial health: through financial inclusion; by helping people manage their everyday finances; and by helping them plan for the future and protect their dreams. In our communities, we partner with local organisations that provide financial planning, coaching and debt counselling. Activities focusing on financial health are already a part of our banking operations in retail markets. These are becoming more critical in 2022 as we see the energy crisis putting additional strain on customers facing higher energy prices. For more details on our financial health efforts, please see here.

Managing climate and environmental risks

Introduction

ING's integrated climate approach considers how we can mitigate climate change through our financing as well as how climate change may adversely impact our business. We are working to become more resilient to climate risk. As a bank, we consider both physical risks, such as the risk of property damage on our mortgage portfolio, and transition risks, such as the loss in value of assets and/or markets that are no longer part of a more sustainable world. Climate risk can impact the macro-economy, businesses, and individual households. Ultimately, physical and transition risks could impact our balance sheet and profitability. That's why we have a comprehensive process in place to identify and understand these risks and integrate them into our risk management frameworks. Our approach is focused on consistently embedding climate risk considerations across the global organisation and making it a pivotal part of how we do business. We continue to develop our approach to climate-related and environmental disclosures as we build our approach to quantifying such risks.

4 World Inequality Report

Preparing for alignment with ECB expectations

The ECB expects all banks to be fully aligned with the 13 expectations outlined in the ECB's Guide on climate-related and environmental risk. We are building our roadmaps to ensure we make steady progress and taking firm action to close gaps where we need to. ECB designated 'good performers' of these 13 expectations, and we are keen to learn from their experience where appropriate. We aim to be fully aligned with ECB's expectations in terms of both content and timelines.

Climate risk data challenges

ESG data is crucial to fully understanding and managing climate and environmental (C&E) risks and to report in line with current and upcoming regulation on ESG disclosures, such as the European Banking Authority's (EBA) Pillar 3 disclosures. In order to upgrade the current expert-based assessment per sector and subsector of both transition risk and physical risk, we will need detailed data from our counterparties; including data on specific assets and regions, their vulnerability to risks, and the actions they are taking to mitigate these risks. The upgrade of the current assessment methods will further quantify the C&E risks at a more granular level. We hope to achieve more visibility regarding these risks as our counterparties start to engage in C&E reporting for different purposes, one of which is the upcoming disclosure requirements in the Corporate Sustainability Reporting Directive (CSRD). Collecting counterparty data will be a massive exercise for which we currently collaborate with peers and third-party data providers within both global and local initiatives.

Assessing biodiversity risks and impacts

The world is currently experiencing dramatic and accelerating biodiversity loss caused largely by human behaviour. This poses not only a threat to our own wellbeing, but also to economic prosperity. The World Economic Forum lists biodiversity loss among the top global risks to society. We are committed to working with our clients to understand risks related to biodiversity loss and help them manage these risks. In 2021 we improved our understanding of how the drivers of biodiversity loss relate to our lending portfolio through a biodiversity hotspot analysis (see Risk management section). The interaction between business and nature forms the core of this analysis and is central to the work of the Taskforce on Nature-related Financial Disclosures (TNFD), established in response to the growing realisation that nature needs to be an important consideration in corporate decision-making. ING supports the TNFD framework and intends to use it as guidance in our future reporting. We are actively working with peers and expert organisations to contribute to the development of the framework. When completed, this framework will form the foundation of how companies, including banks like ING, manage biodiversity and nature-related risks.

Climate adaptation

The current 1°C of global temperature rise compared to pre-industrial level is already causing more frequent and intense extreme weather events such as heatwaves, floods and wildfires. These have resulted in devastating losses and damage, with disproportionate impact on the most vulnerable people and natural systems. Since global temperatures will continue to rise even under the most ambitious emission reduction scenarios, it is essential to take measures to reduce our vulnerability from the harmful effects of climate change, known as climate adaptation. Examples of climate adaptation measures include protecting coastlines and dealing with sea-level encroachment, managing land and forests, dealing with, and planning for reduced water availability, developing resilient crop varieties, protecting energy and public infrastructure.

Climate adaptation and mitigation (reducing greenhouse gas (GHG) emissions) are linked and when addressed jointly, their impact can be magnified. For example, urban green measures like green roofs, help reduce GHG emissions from energy use, while increasing water absorption capacity, thereby making urban areas more resilient to potential flooding events.

Adaptation requires investment by governments, companies, and private individuals, and we recognise that as a bank, we have an important role to play. According to the United Nations Environment Programme Finance Initiative (UNEP-FI) Physical Risks & Resilience statement, which ING endorsed in 2021, banks should support adaptation by improving their understanding of physical climate risk drivers and their impact on banks' portfolios under different climate change scenarios. This will help banks identify companies or business areas vulnerable to climate change and then engage with them to support adaptation efforts. In other words, in addition to reducing the physical risks impact on our portfolio, banks can support clients and communities to adapt through financing.

We support our clients mainly via loans for general corporate purposes that may be used for adaptation efforts and by advising on sustainable financing solutions. An example of this is our role in a financing package to construct the UK's first new reservoir in a generation, ensuring water resilience in the Southeast region for the next 80 years. KPIs for this Sustainability Improvement Loan covered environmental and social factors such as water leakage, supply interruptions, carbon reduction, biodiversity, and affordability.

Human rights

Climate change has a profound impact on many fundamental human rights including, but not limited to, the right to food, health, water, and sanitation. Although it is more important than ever that we take serious mitigation and adaption measures, we must ensure that these measures avoid impacting human rights. As a financial institution, we help finance the energy transition through projects and by working closely with our clients. In order to manage the potential human rights impacts of customers and clients, including our corporate clients, the ESR framework includes a standalone human rights policy. Our stance is outlined in a specific human rights policy, as well as in our policies for sectors known to be sensitive to human rights related issues.

We are committed to aligning our lending portfolio with net-zero goals, but we also believe that our climate mitigation and adaptation strategies should be socially inclusive and responsible. For instance, building a hydroelectric dam to regulate floods in lowlands might be an effective climate adaptation measure, but it may also restrict access to land and forest resources for people who live upstream, increasing their vulnerability to the impacts of climate change. Climate mitigation actions could also have an adverse effect on human rights. Reducing carbon emissions involves closing down coal mines and coal-fired power plants, which in turn could result in millions of people losing their jobs. In such cases, we believe it is the joint responsibility of governments and businesses to ensure that employees are re-trained to meet the demands of the job market and remain employable.

The transition to a green economy may impose impacts to people. Transitioning out of fossil fuels may result in stranded assets and communities, and increase energy poverty of vulnerable people reliant on fossil fuels. Transitioning into renewable energy may raise issues of land grabbing, indigenous peoples' rights, displacement of communities due to the increase into mining for green energy metals and minerals. It may also may affect food and water security, potentially increasing the presence of forced labour and harmful child labour.

We recognise that as the world is transitioning from a carbon-intensive economy into a green economy, we must collectively put people, especially the most vulnerable, at the front and centre of the energy transition based on the articulation of their needs.

Risk management

Introduction

As climate risk becomes increasingly relevant, many banks have started to evaluate the potential negative impacts it could have on their business. Transition risk as well as physical risk could impact the economy, our clients, and therefore our business. Even after implementing measures to finance positive change, physical risks could continue to rise, and therefore need to be well understood and managed.

Managing climate and environmental risks covers both physical risks and transition risks:

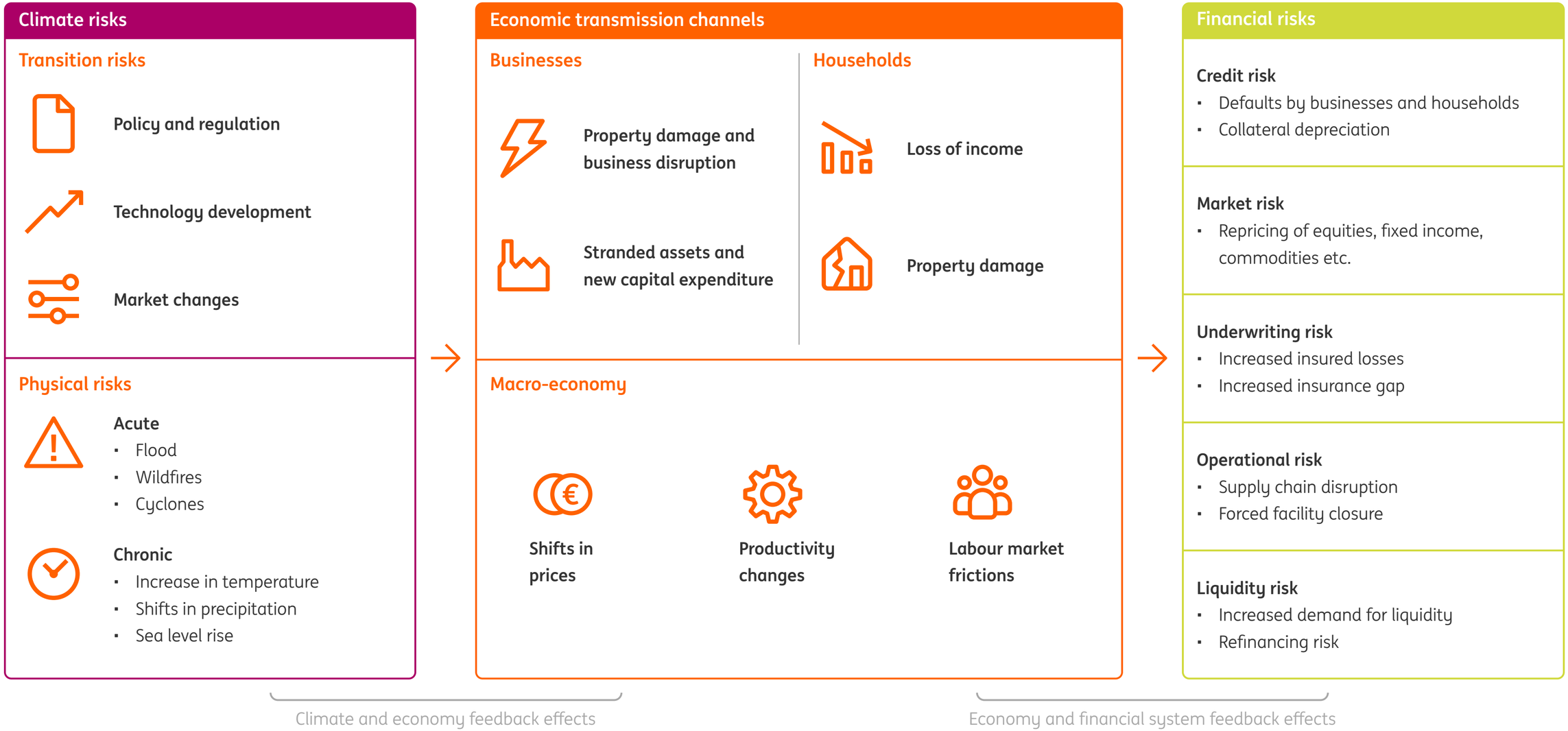
- **Physical risk.** This can be event-driven (acute), caused by extreme weather conditions such as cyclones, droughts, floods and fires, or longer-term (chronic), due to progressive shifts like rising temperatures and sea levels, water stress and biodiversity loss.
- **Transition risk.** This can arise from changes in policy, law, technology and the market that occur in the transition to a lower-carbon economy. Transition risk could result in stranded assets and/or markets consequently eroding the value of assets that are no longer part of a more sustainable world.

The potential impacts of physical and transition risks on households, businesses and the macro-economy require us to consider climate and environmental risk as a driver that could have material impact in both the financial and the non-financial risk domains. As shown in Figure 1, the feedback effects for climate risk need to be embedded in existing risk management processes for the credit, market, liquidity, and operational risks areas to enable monitoring and portfolio steering.

Under ING's governance for policy review, we assessed the Group-wide policies and procedures for Financial Risk, ESR, Operational Risk, Compliance and Retail Risk for guidance on climate-related and environmental risks. We updated relevant policies with specific requirements for climate and environmental risks, focusing on credit risk. Our risk rating policy was updated to explicitly include climate-related and environmental risks as a valid reason to appeal the rating.

Figure 1 Climate risks to financial risks

Source: Adapted from NGFS Climate Scenarios for central banks and supervisors, June 2020



Our approach to managing climate risk

Risk identification and assessment

We continued to enhance the tools used to identify and assess climate and environmental risks in our portfolio. We created extensive heatmaps to climate and environmental risks for Wholesale Banking and Retail Banking. See more detailed information about the heatmaps in the Metrics and targets section.

The C&E heatmaps also facilitated the materiality assessment of climate and environmental risks through the scores assigned to risk drivers in each portfolio. This enabled us to create a global overview of the extent of climate risk impact on specific sectors, indicating which sectors are most exposed to climate risk.

Risk Appetite Setting

We used the outcomes of the C&E heatmap exercise to introduce climate-related and environmental risk in our 2022 credit RAS cycle. For Wholesale Banking a mechanism was introduced on a monitoring basis at the start of 2022 that limits growth of subsectors with a higher exposure to climate-related and environmental risks while allowing for growth within the overall limit of the sector. As from July 2022, this mechanism has become binding for the Wholesale Banking sectors. For Retail Banking, the monitoring period will continue until the end of this year as the outcome of the physical risk assessment will be used to decide on the limit setting for climate-related and environmental risks in the risk appetite framework.

ECB stress test outcome

Introduction

Stress testing is an important risk management tool that provides input for strategic decisions and capital planning. The purpose of stress testing is to assess the impact of plausible but severe stress scenarios on ING's capital and liquidity position. Stress tests provide complementary and forward-looking insights into the vulnerabilities of certain portfolios, regarding adverse macro-economic circumstances, stressed financial markets, and changes in the geopolitical climate.

In the second half of 2021, ING started preparing for the regulatory climate risks stress test, which, in 2022, became part of the bi-annual ECB Single Supervisory Mechanism (SSM) stress test. This regulatory stress test, combined with our own climate risk analyses, will be used to enhance ING's internal climate risk stress testing. In the first half of 2022, ING participated in the ECB's industry-wide climate stress test. The test consisted of three modules to test our capabilities for assessing climate risk:

- **Questionnaire.** A qualitative assessment was made of ING's climate risk stress testing framework, including its governance, design, and usage.
- **Peer benchmark.** Information about ING's interest and fee income was provided for specific sectors, for those countries that are understood to be sensitive to transition risk and that are associated with financed GHG emissions. Revenues, loan volumes and scope 1, 2 and 3 GHG emissions were also reported for the top 15 clients per sector.

- **Bottom-up stress test.** Six individual stress tests were performed, based on a uniform methodology and on the scenarios of the Network for Greening the Financial System. Three transition risk stress tests were also carried out: two short-term tests covering credit risk and market risk, and one long-term test covering credit risk. Two physical risk stress tests were performed: one for the impact of droughts and heat, and one for the impact of floods. Lastly, a qualitative assessment was made for non-financial and reputational risks.

Progress and challenges on climate risk stress test

The ECB shared its assessment of the climate risk stress test on an aggregated basis in its 2022 Climate Stress Test Report, as well as in a bank-specific report. The key challenges of the stress test were data-related. The required attributes, such as GHG emissions and Energy Performance Certificates (EPC), were not available for all counterparties and proxies were used. Other challenges were the modelling of new drivers such as carbon pricing, for which the ECB provided guidelines, and the long-term horizon of 30 years, which requires us to consider evolving strategic decisions and changes to ING's balance sheet over this period.

Next steps

We will use the data we gathered and the models we developed for the ECB exercise as a starting point for enhancing our internal climate risk stress test capabilities.
An internal climate risk stress test is planned for the fourth quarter of 2022 and will include the full credit risk portfolio as well as other risk types like interest rate risk in the banking book (IRRBB) and operational risk. This stress test will be used for our Internal Capital Adequacy Assessment Process (ICAAP).

Summary per risk domain

ING has been further enhancing its capabilities for identifying climate risk drivers and integrating them into existing risk management processes. Table 1 shows the impact climate risk can have on various risk areas, what has been done to address it and what steps have been defined for the coming period.

Table 1 Summary per risk domain

Risk category	Potential effects of climate risk drivers	What we do to manage risk	Next Steps
Financial risk			
Credit	Climate risk drivers (physical and transition risk as outlined above) can reduce the ability of businesses and households to cover their obligations due on existing lending contracts. These may also lead to depreciation/erosion of collateral values which would translate into higher credit losses and loan-to-value ratios.	▪ Climate risk drivers have been incorporated in the risk identification and assessment process and the climate risk WB sector heatmap was further completed. ▪ This heatmap has been utilised in the introduction of Climate WB Sector Limits in the Credit RAS 2022 ▪ Climate and environmental risk analysis within the credit approval process was piloted in the Transport and Logistics sector.	▪ Refine the Climate Credit RAS methodology and operationalisation ▪ Expand the Climate Credit RAS for retail sectors. ▪ Develop dedicated Climate risk credit stress scenarios and materiality assessment. ▪ Roll out the C&E risk analysis to all sectors incorporating longer time horizons and extended use of data.
Market	Volatilities of equities (for companies with unsustainable business models), fixed income products (increased sovereign risk) and commodities as well as stranded assets may have a negative effect on ING's income from related products due to financial asset revaluations and mismatches in price levels.	▪ C&E risk drivers have been integrated in the liquidity and market risk identification process and assessed for materiality. ▪ Funding and liquidity risk policies have been updated with the inclusion of C&E risk elements.	▪ Integrate climate risk in stress scenarios for both Liquidity and Market risk. ▪ Incorporate Climate risk elements in RAS for both Liquidity and Market risk. ▪ Plan and execute updates to policy.
Liquidity	As a result of changing market conditions, ING's funding base may become more volatile and be affected both in terms of availability and cost. That might lead to increased deposit outflows, higher drawdowns on credit/liquidity facilities, and scarcity of professional funding at increased cost.		

Risk category	Potential effects of climate risk drivers	What we do to manage risk	Next Steps
Non-financial risk			
Operational	ING's operational capabilities and/or ability to deliver services to clients may be disrupted due to acute or chronic physical risks.	▪ The Business Continuity Framework has been updated to incorporate physical risk drivers and the ability to recover from their impact. ▪ Physical risk drivers are embedded in the risk identification and assessment process.	▪ Add transition risk as a new risk driver and assess it on materiality. ▪ Develop dedicated Climate risk stress scenarios.
Compliance	Risk from failure to act in line with applicable or emerging climate related laws, regulations, society expectations and internal policies and Codes e.g. ING Code of Conduct.	▪ Relevant regulations identified, followed up and implemented following the ING Change process and Compliance processes like risk assessment, policy making and monitoring. ▪ The Product Approval and Review Process contains a Customer Golden Rule on ESG, considering ESG risk, impact and communication for products we launch and review. ▪ Scenarios for assessing climate risk drivers have been included in the non-financial risk materiality assessment.	▪ Maturing climate risk management by further embedding climate-related risk in compliance risk framework, relevant policies, guidelines and processes and relevant governance. ▪ Incorporate climate risk indicators in Compliance cockpit and Risk Appetite Statement.
Overarching risk			
Reputational	Risk from ING being negatively viewed by stakeholders for not meeting or sufficiently progressing on climate-related expectations.	When a transaction is deemed prone to reputational risk by the Management Board Banking (MBB), then the Environmental and Social Risk (ESR) team and Group Sustainability's Business Ethics team provide advice for those clients/transactions. Negative ESR advice can only be overruled by either MBB or the Global Credit Committee.	Determine approach to identify, assess, and mitigate reputational risk from the full scope of ING.

The ESR framework

ING's ESR policy framework helps us make transparent choices about how, where and with whom we do business. In 2021, we updated the ESR Framework as part of the three-year mandatory comprehensive review cycle. The new release takes account of the recent ESR requirements of the EBA Loan Origination and Monitoring guidelines, improved controls and comments received from internal and external stakeholders. The update further aims to improve understanding of existing process and evaluation requirements, with special attention to supply chain due diligence. Where appropriate, internationally acknowledged certification standards and guiding principles have been added to or adjusted per the individual sector policies.

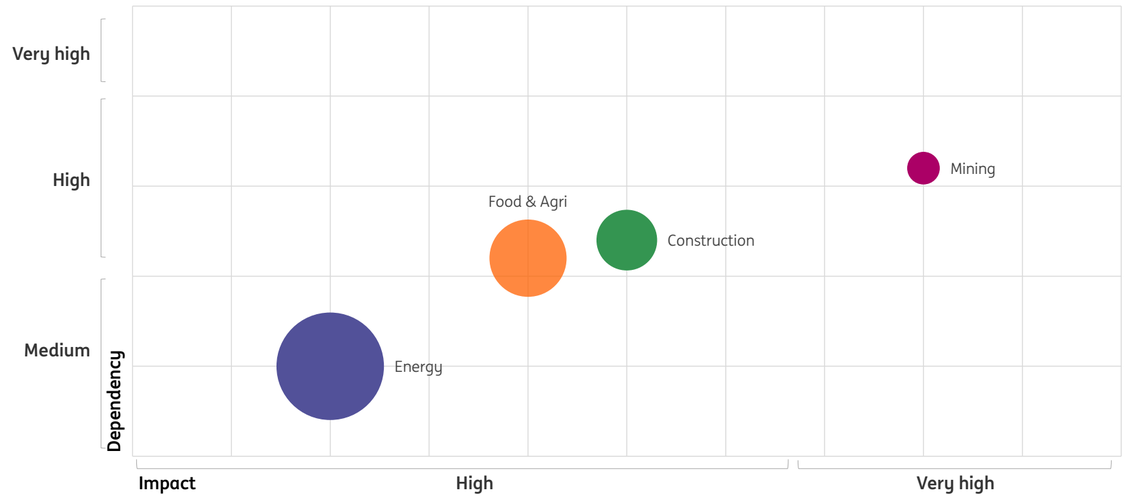
In 2021, we continued the implementation of the new ESR self-declaration approach for Business Banking. The concept was incorporated in the updated ESR Framework. There is an alternative ESR client assessment implementation for Business Banking clients where lending and pre-settlement limits exceed €1 million and where the client is active in any of the pre-identified sectors, such as employment agencies. Such clients will be required to confirm their compliance with specific statements related to safeguarding labour rights and/or environmental regulations that are specific for that sector. The initiative has already been rolled out in half of the countries where we are active with Business Banking clients globally while other affected ING locations are expected to implement this in the course of 2022. Following any key ESR policy updates on restrictions, we engage with affected clients and provide them with the opportunity to reduce their exposure to the new restrictions; in case a reduction is not feasible, we implement an exit strategy. We will continue to update and refine our ESR policy to ensure it reflects ING's risk appetite and sustainability direction.

Biodiversity hotspot analysis

Business operations can impact biodiversity, while biodiversity loss can impact business. To calculate the risks involved to both, we first need to understand the relationship between the two and how a particular business impacts, and depends on, certain ecosystems. To gain such insights, ING performed a biodiversity hotspot analysis in 2021.

ING's biodiversity hotspot analysis reveals those sectors where our lending portfolio is most dependent on, and could most impact, biodiversity. We based our analysis on the tool ENCORE, (Exploring Natural Capital Opportunities Risks and Exposure). The outcome of this analysis led us to focus on the sectors food and agriculture, construction, mining, and energy because these have an increased impact and dependence on biodiversity. The dependence is largely because companies operating in these sectors rely on ecosystems for water while the ecosystems protect them from floods and storms. On the impact side, the main issues in these sectors are the amount of land used, the way it was used, and the levels of water used in production.

Figure 2 Materiality of sector-level biodiversity impacts and dependencies



*Size of bubble represents size of ING Wholesale and Business Banking loan portfolio, per Dec 2021

We can explain the outcomes of the hotspot analysis by focusing on the agricultural sector. ING is a financier of the agriculture sector, which clearly is important for the total food chain and vital for livelihoods in rural areas all over the world. However, the sector also contributes to the climate problem, as farming is responsible for both carbon and methane emissions. The biodiversity hotspot analysis showed biodiversity loss is also material to the sector. While agriculture can have a negative impact on nature, it depends on its biodiversity, in the case of crop pollination, for soil health and stability, and to ensure water retention. The use of fertilisers and pesticides can negatively affect surrounding natural environments, and some forms of agriculture compete with nature for water. Nitrogen deposits, which can disturb ecosystems and cause biodiversity loss, are a growing problem in the agriculture sector, especially in the Netherlands and Belgium. For this reason, and because of its relevance to our clients, we follow the public debate with great interest.

Companies with a high ecosystem impact face a higher level of transition risk from regulatory and policy changes, changes in consumer demand and market changes. For instance, if a valuable ecosystem gains protected status, the financial risk for companies operating in or near that area can increase. High dependency of sectors in our portfolio exposes ING to physical risk from ecosystem deterioration, leading for instance to reduced availability of natural resources.

Knowing these risks allows us and our clients to look for ways to mitigate or negate them. The agriculture sector for instance, is increasing its efforts to realise regional food supply chains. By connecting local producers with local consumers, the emissions caused by long-distance transport can be minimised. At the same time, food production for the world market is also needed. In this case, new technologies and innovative farming practices can ensure high yields with a low footprint per unit of output. Another trend is the increase in organic and circular farming, both of which help reduce the use of artificial fertilisers and nitrogen deposits. There is also an increase in nature-inclusive farming, where farmers, for example, create herb-rich grass fields or flowery field borders. The sector is also working to reduce its emissions of greenhouse gasses, by technological innovations or changes in animal feed.

ING is keen to support agricultural entrepreneurs in their transition to a sustainable business and we discuss the trends mentioned above with our clients. For such a transition to be successful it must be profitable for the farmer, which is often a challenge. To create a better earnings model, we reach out to actors throughout the food value chain to work on solutions that will provide farmers with extra income for their sustainability efforts. Large-scale agriculture is not always the way to achieve good income, and diversification of income is also possible. That's why in the Netherlands we have changed our credit assessment process to consider income from other sources, such as farm stores, camping sites or day-care activities, in our calculations.

We acknowledge that some exposures indicated by the hotspot analysis could be higher or lower than our analysis reveals. The data we used is based on sectoral and geographical averages and therefore has limitations in accurately assessing the risks in our portfolio. Going forward, we will further granulate our assessment of impacts and dependencies.

Metrics and targets

Own operations

From 2020 to 2022, our targets for operational carbon emissions were divided between a scope 1 and 2 target of 80% reduction, and a scope 3 target for business travel of 25% reduction. As part of a detailed review of our Environmental Programme and our historical data, we have identified that our progress against these targets was behind what was reported in our 2021 Annual Report. Reviewed data indicate that at year end 2021, we reached:

- In scope 1 and 2, a 77% reduction in CO_2e to roughly 18,700 tonnes, instead of the 80% reduction previously reported.
- In scope 3, a 72% reduction to 6,900 tonnes, instead of the 79% previously reported.
- Collectively, this brought our combined operational emissions reduction across scope 1, 2 and scope 3 business travel to over 75% at the end of 2021.

Aside from corrections to historical data, our review also included correcting coverage statistics applied to our extrapolated emissions reporting totals. We also improved our methodology, by updating the emission factors applied to district heating use from a global average factor to country specific factors and backdating the application of these to our baseline year. Updated figures, including restatements for 2020 and 2021 can be found in the appendix of this report.

In 2020 and 2021, our footprint continued to be impacted by Covid-19 related restrictions to both buildings and travel. As we adjust to the new normal, we have set a new mid-term target for 2025, to reduce our CO_2e emissions by 75% compared to our 2014 baseline. We have previously shared a scope 1 and scope 2 target for 2030 of a 90% reduction by 2030, where we plan to review this ambition and come with a combined target for scope 1 scope, 2 and scope 3 for business travel by 2030.

Renewable electricity

In 2020, we reported that we reached 100% renewable electricity for the first time in our owned and managed buildings worldwide, and in 2021 we reported that we maintained this 100% level. An additional note should have accompanied our reporting in those years relating to RE100 requirements for market boundaries. In 2020 we assessed our reporting as reaching 99.7% alignment with the technical criteria of the RE100 related to market boundaries, where the remaining 0.3% was not aligned. This was because the EACs that we have sourced for some of our smaller markets (for example Kazakhstan and Argentina etc.) were sourced outside of the market boundaries specified in the RE100 criteria. The EACs sourced for these locations were mostly in neighbouring markets to ensure relative proximity to the market operations.

In 2021, we maintained 100% renewable electricity, where we assessed that our reporting was 99.2% in alignment with the technical criteria of the RE100 related to market boundaries, where the remaining 0.8% was not aligned. This was because the EACs for some of our smaller markets were sourced outside of the market boundaries specified in the RE100 criteria. In addition, for 2021, the sourcing of RECs for our Russian market was interrupted due to the suspension of the Russian I-REC platform, following the conflict in Ukraine and sanctions. In that situation we have sourced RECs for those operations from Poland. We will continue to share our alignment with RE100 criteria on an annual basis.

In order to dive deeper, in this report we share more information about our approach to renewable electricity usage in our largest markets. We recognise that we can and should go further in quantifying the milestones described below and our targets to improve, and plan on doing so going forward.

The Netherlands

Approximately 1.4 million KWh of renewable electricity was generated in 2021 through roof-top solar installations at seven of our buildings in the Netherlands. These include rooftop solar installations at Maple and Cedar, two headquarter buildings, the latter of which is our largest building in the Netherlands. Cedar's electricity is sourced from both rooftop solar, and from a solar park in Diemen, approximately 5km from the site which generated an additional 1.5 million KWh in 2021. This project is run by Vattenfall, under a 15-year contract with ING. In 2022, we are adding solar installations at nine other offices. For next year, plans are already in place to install solar panels on at least two more branches with likely more to be added to the planning, and expand the current installations on two main offices. The vast majority of our remaining renewable electricity for our operations in the Netherlands comes from a renewable electricity contract with Vattenfall from Dutch wind projects.

Belgium

In 2021, 10,000 KWh of electricity was generated by rooftop solar across our buildings in Belgium, most of it from an installation at one of our largest branches. In addition, we started the construction of a new rooftop solar installation this year as part of the renovation of our main headquarters building in Brussels. The remaining electricity used in Belgium comes from a renewable electricity contract with Engie for sourcing electricity from Belgian onshore wind and solar projects.

Poland

Around 90,000 KWh of electricity was generated in 2021 from installed roof-top solar in Poland, including from solar installations at three of our largest headquarters offices in Katowice. One of the buildings also installed a new solar-collectors system for hot-water heating systems in 2021. We have continued to construct solar installation on the ground and parking shelter close to our Roździeńska St building in Katowice, which is due for completion in 2022. The majority of remaining electricity used in Poland comes from renewable electricity contracts with Tauron energy company, sourced from local wind farms. We also buy renewable electricity from TGE for energy from different electricity suppliers by landlords in locations where we rent the space. In 2022, work is underway to install additional solar capacity on the ground and parking shelter at another of our headquarters' buildings in Katowice.

Turkey

We generated more than 440,000 KWh from rooftop solar installations in 2021 in Turkey. This came from the solar power system installed in our large operations centre in Maraş. In 2022, this rooftop solar installation contributed more than 50% of the facility's electricity consumption during the summer months, with an annual average rate of just over 35%. There are plans to develop a large-scale solar power plant in the land adjacent to this building in 2023. The majority of the remaining electricity used in our buildings in Turkey is sourced from the Kolen Energy company, from the hydro-electric power facility in Akkoy.

Germany

The majority of our renewable electricity in Germany comes from renewable electricity contracts with Entega Energy and Mainova Energy. We recently received building permission for our first roof-top solar installation, which will be up and running in the third quarter of this year and is expected to generate around 100,000 KWh per year.

We continued to expand our installed renewable capacity in other countries, such as Spain, where the new installation on our new headquarters building is expected to produce about 101 MWh/year. A rooftop solar installation for our Italian headquarters in Milan is being constructed over the coming months.

Terra – steering our portfolio

Introduction

The Terra approach is ING's strategy for steering our loan book towards net zero by 2050 or sooner and contributing to keeping global warming within 1.5 degrees compared to pre-industrial levels. The Terra approach was developed in partnership with the 2 Degrees Investing Initiative (2DII), using their Paris Agreement Capital Transition Assessment (PACTA) tool. In 2019, ING published its first annual Terra report over its 2018 loan book. Over the past few years, the Terra approach has brought nine sectors into scope and has seen several improvements on data quality and methodologies. We will continue to improve the Terra approach on all fronts to ensure a continually informed, transparent and robust transition to a net-zero economy.

With the Terra approach, ING currently measures the emissions associated with the clients active in the most carbon-intensive sectors and uses this information to benchmark its clients' activities against the relevant decarbonisation scenarios. This allows us to steer our portfolio by means of engagement with our clients and by supporting them in their transition where necessary. Additionally, by measuring the absolute financed emissions of our portfolio, we perform hotspot analyses to monitor our loan book and define next steps for expansion.

In the following sections, we provide all details related to our principles, the adopted methodologies, climate scenarios and data sets, which provide the foundation for the Terra approach and the basis for measuring our performance in the covered sectors: power generation, upstream oil and gas, commercial real estate, residential real estate (mortgages), cement, steel, automotive, aviation and shipping. While most of the information on how we are transitioning towards net-zero is already available in the following sections, next year, we will also publish a more detailed transition plan on how we plan to reach net-zero.

Principles of the Terra approach

Three main principles underpin the choices we make in Terra:

Impact based

Terra is designed to make the biggest possible impact in terms of real-world decarbonisation. Banks can maximise their effectiveness by redirecting financial flows towards a greener economy. As such, we first focus on supporting the transition in the most carbon intensive sectors, and more specifically by financing the changes that need to happen in specific part of the sector value chain. For example, our approach is to steer our power generation portfolio towards renewable sources of energy and our automotive portfolio towards electrified vehicles. By targeting the integral control points in the value chain, as defined by the methodologies we adopted such as PACTA, we intend to achieve the actual transition to a low carbon economy.

Based on climate science

We follow the most up-to-date climate science available, which is the cornerstone of how Terra measures our loan book's climate alignment, sets our targets and steers towards them. All targets and decarbonisation pathways are based on recognised and reputable institutions, like the IEA, and all carbon accounting is done in line with the Greenhouse Gas Protocol. Additionally, through participation in alliances, like the NZBA, and in working groups including the Poseidon Principles and the Sustainable STEEL Principles, we continually commit to guidelines based on the most recent developments in each sector. Continued membership and leadership in sector working groups compliments our toolbox approach by helping us build and apply the best fit methods for each sector to make the most impact in the real economy.

Engagement driven

Through the billions of euros flowing through our loan book, we play an important role in our clients' transition to net zero by 2050. As such, simply reducing our exposure to emissions-intensive clients is not how we intend to reach net zero, because divestment will not promote decarbonisation in the real economy. Rather, it is our priority to finance and support clients who have ambitions to decarbonise their activities and engage with new ones that will allow us to further steer our portfolio towards net zero targets by 2050. The Terra approach augments this principle by providing insights on the current and forecasted performance of our clients, which helps in making informed decisions regarding the decarbonisation ambitions of all the covered sectors.

Key methodology choices

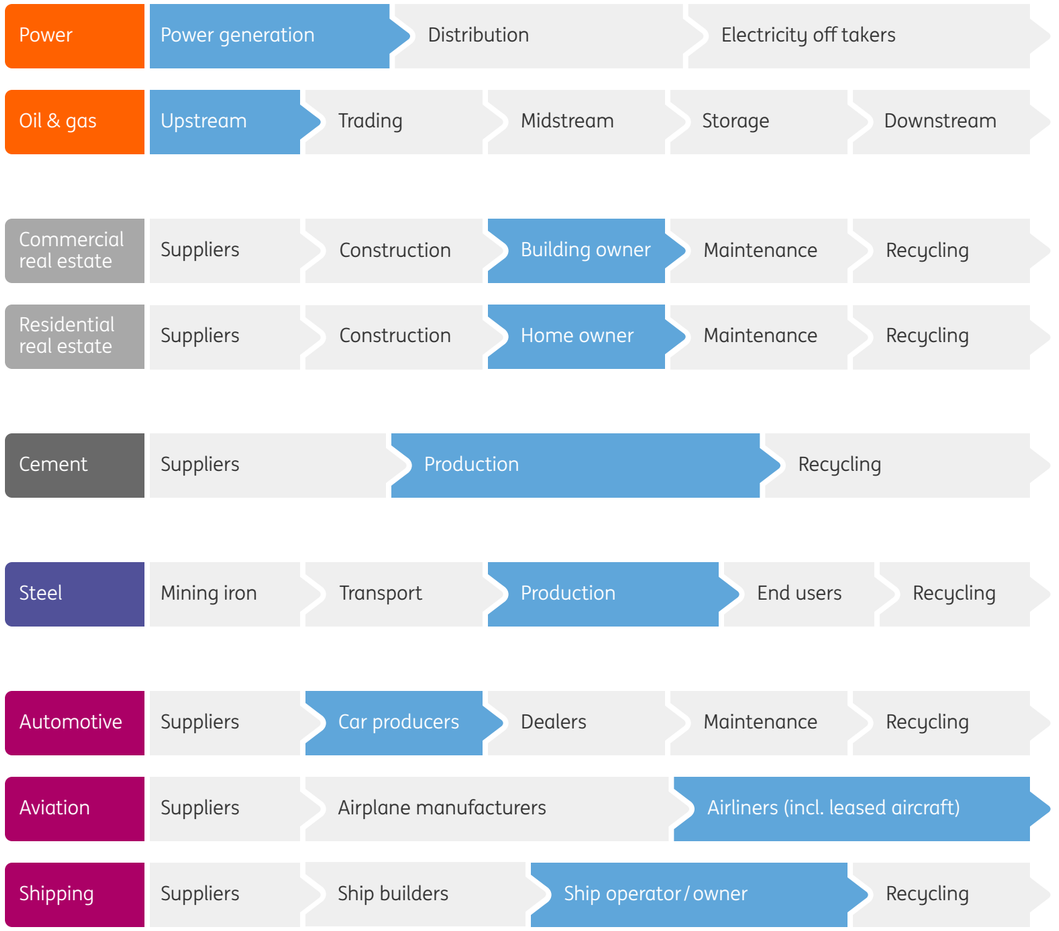
Methodologies

Within Terra, we apply what we consider to be the best-fit methodology per sector to measure and steer our loan book. For most sectors, and more specifically power generation, cement, aviation and automotive, we use PACTA, which ING co-developed together with 2DII. For oil and gas, we apply the PACTA Credit Portfolio Alignment. For commercial real estate and residential real estate, we use the PCAF methodology. Finally, for shipping and steel we respectively use: the Poseidon Principles and the Sustainable STEEL Principles.

Terra's coverage of sectors and value chains

As guided by Terra's principles, the methodologies we use focus on the part of the value chain which controls the bulk of the impact on the climate system, and on which decarbonisation efforts must be concentrated to spur the entire sector to fall into alignment. The specific boundaries are defined by the methodologies adopted. The Terra approach thus covers the subset of lending activities depicted in the following chart.

Figure 3 Portfolio scoping



Focusing on specific sectors and specific parts of their value chain means that we can concentrate our efforts to support our most carbon-intensive clients in their transition. More specifically, with our Terra approach, we cover 63% of the emissions associated with our Wholesale Banking book and 93% of the emissions coming from our mortgages book. Regarding the SME and mid-corporates book, we have joined a new project of our partner 2DII to develop a climate database on SMEs, which we aim to use in the future to measure their climate alignment. Figure 4 provides an overview of the financed emissions associated with our loanbook and our current coverage, following PCAF methodology.

Figure 4 Terra coverage of ING's lending book financed emissions

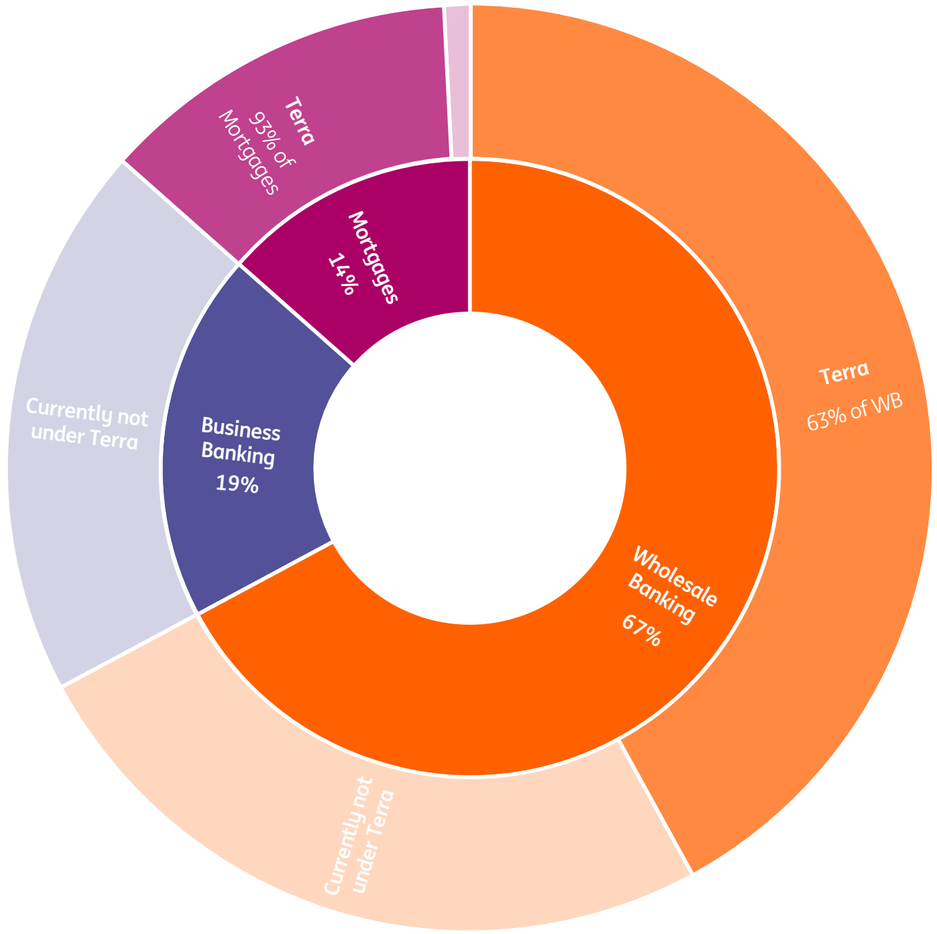
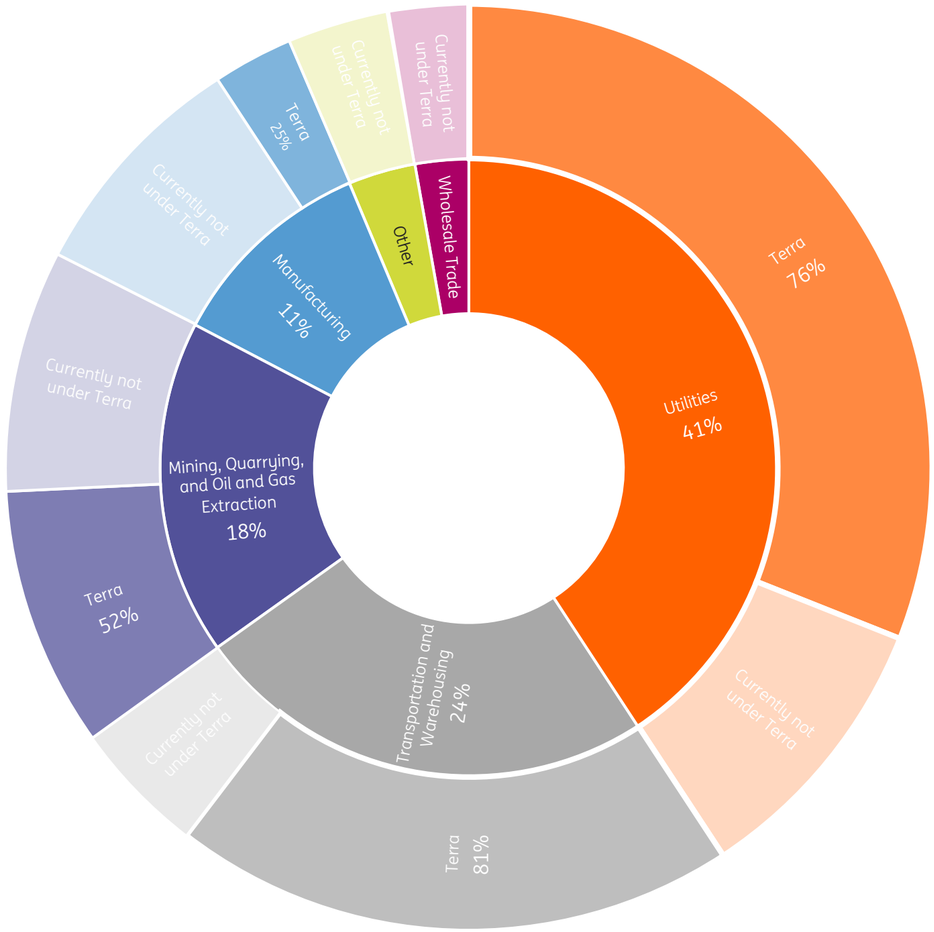


Figure 5 Terra coverage of ING's Wholesale Banking book financed emissions



Additionally, for Wholesale Banking, Figure 5 shows a breakdown of the estimations of our absolute emissions per sector, the inner circle, and the Terra coverage, the outer circle. We aim to increase our coverage in the coming years by expanding to new sectors where data and methodologies allow. An example of expansion which we foresee in the near future is the inclusion of the Aluminium sector, following the completion of the Center for Climate-Aligned Finance's facilitated Aluminium working group that ING is co-leading.

Product scoping

The product types in scope are those that most accurately represent lending on a continuous basis, currently: revolving loans and term loans, each based on loan outstanding. This selection follows the PACTA Credit Portfolio Alignment paper, co-written by ING, which also provides additional information regarding this choice and the possible expansion to additional products and services in the future. Within the two covered product types, we distinguish broadly between two types of loans:

- General corporate purpose loans will be linked to the borrower, which can be a subsidiary or the ultimate parent company, provided that the borrower is known in external data. 'General corporate purpose' means that we don't control the use-of proceeds, so we assume that the funding is at the disposal of the company; and
- Special purpose loans, on the other hand, are ring-fenced loans where >50% of the proceeds will be used for a specific purpose (e.g. project-based or asset-based finance) and as such can generally be matched to physical asset(s), provided external data sources cover the relevant physical asset(s).

Scenario selection and target setting

To align a portfolio with net zero, we need climate scenarios to benchmark with. Those benchmarks also determine what the net-zero aligned intermediate (2030) and long term (2040 or 2050) targets should be. In line with our Terra principles, we believe scenarios used should always reflect the most recent scientific information from recognised institutions like IEA, if available. While in past years our benchmarks were aimed at limiting the increase in global temperatures to well below 2 degrees, our commitment to net zero by 2050 means that this year we assessed and applied new net-zero-aligned scenarios to the sectors for which they are available. The targets have been approved by ING's MBB.

Power generation and upstream oil and gas were already benchmarked against the IEA's NZE2050 net-zero pathway in our 2021 Climate Report. This year, the automotive, steel and aviation sectors have also adopted the IEA NZE2050 as the new benchmark. For the cement sector, however, we selected the Institute for Sustainable Futures' Net-Zero by 2050 scenario (ISF-NZ). The ISF-NZ is the scenario most compatible PACTA's measurement methodology. For Commercial Real Estate, which is currently only measured for the Netherlands, we kept the Paris Proof Scenario of the Dutch Green Building Council (DGBC) as our benchmark. Finally, for residential real estate, we have also adopted the IEA NZE2050 scenario.

Realisation of targets is also dependent on factors which are outside of ING's direct influence. Policy interventions are required to ensure the global transition to a low carbon economy. Specific material factors are explained per sector in each sector section.

Table 2 Updated targets per Terra sector

Sector	Old targets		New targets	
Power generation	2040	net-zero target	2030 and 2040	net-zero targets
Upstream oil and gas	2025	net-zero target	2025,2030 and 2050	net-zero targets
Commercial real estate	2050	net-zero target	2030 and 2050	net-zero targets
Residential real estate	2050	well-below-2-degrees target	2030 and 2050	net-zero targets
Cement	2050	well-below-2-degrees target	2030 and 2050	net-zero targets
Steel	2050	well-below-2-degrees target	2030 and 2050	net-zero targets
Automotive	2050	well-below-2-degrees target	2030 and 2050	net-zero targets
Aviation	2050	well-below-2-degrees target	2030 and 2050	net-zero targets
Shipping		well-below-2-degrees target	2030 and 2050	well-below-2-degrees target

Asset level and client level data

For our measurements, when possible, we prioritise asset level data. Having emissions information on asset level provides the most granular and accurate measurement on our clients' impact, which mainly comes from the buildings, aircraft, ships, power-generation plants that they own or operate. When we provide general purpose loans rather than asset financing, we make use of company level data. This is also the case when asset level data is not available.

Offsets for GHG scope 3 category 15 emissions

Reducing our GHG scope 3 category 15 (scope 3.15) emissions should first and foremost come from the reduction in carbon emissions of our customers, as the priority should lie in limiting the amount of CO_2 emitted into the atmosphere. In our approach, we therefore prioritise real decarbonisation efforts and do not use any offsetting in measuring our portfolio.

The Terra toolbox

Table 3 Overview of approaches applied, output types and data sources

Sector	Outstanding in scope	Methodology used to measure portfolio	Scopes covered	Metric	Scenario / Pathway	Baseline		2021YE		Alignment score	Target vs. baseline	
						Year	Portfolio value	Convergence pathway value	Portfolio value		2030	2050
Power generation	€ 8.9 billion	PACTA	Scopes 1, 2	kg CO_2e / MWh	IEA NZE 2050	2018	335	289	223	-23.0%	-53%	-100%
Upstream oil and gas	€ 3.1 billion	PACTA Credit Application Paper	N/A	Outstanding amount in EUR million	IEA NZE 2050	2019	3,986	3,701	3,138	-15.2%	-19%	-69%
Commercial real estate	€ 10.9 billion	PCAF	Scopes 1, 2	kg CO_2 / m^2	Deltaplan DGBC	2019	51.4	48.1	43.7	-9.2%	-35%	-100%
Residential real estate	€ 297.0 billion	PCAF	Scopes 1, 2	kg CO_2 / m^2	CRREM 1.5° pathways/ IEA NZE 2050	2021	45.7	44.3	45.7	3.2%	-57%	-99%
Cement	€ 337 million	PACTA	Scopes 1, 2	t CO_2 / t cement	ISF-NZ	2020	0.704	0.681	0.709	4.2%	-31%	-69%
Steel	€ 2.9 billion	Sustainable Steel Principles	Scopes 1, 2	t CO_2 / t steel	IEA NZE 2050	2021	2.10	1.99	2.10	5.4%	0 * (~28%)	0 * (~94%)
Automotive	€ 2.4 billion	PACTA	Scope 3	kg CO_2 / km	IEA NZE 2050	2020	0.199	0.189	0.187	-0.8%	-49%	-98%
Aviation	€ 3.1 billion	PACTA	Scope 1	g CO_2 / passenger km	IEA NZE 2050	2019	88.2	82.9	130.4	57.3%	-33%	-87%
Shipping	€ 6.5 billion	Poseidon Principles	Scope 1	Alignment delta	Poseidon Principles	2020	-0.4%	0%	-6.0%	-6.0%	0% *	0% *

* Target for alignment score

Climate alignment dashboard

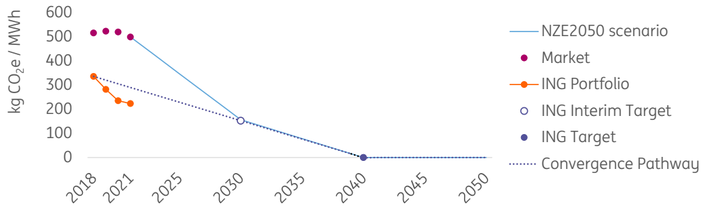
Portfolio view - Outstandings as of year-end

On track: Under or equal to benchmark
Above benchmark by up to 5%
Not on track: Above benchmark by more than 5%

Power Generation

Global Decarbonisation Pathway

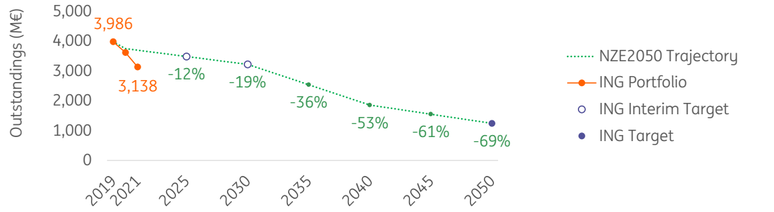
ING vs. pathway
-23.0%



Upstream Oil & Gas

Absolute Financing Trend Reduction Pathway

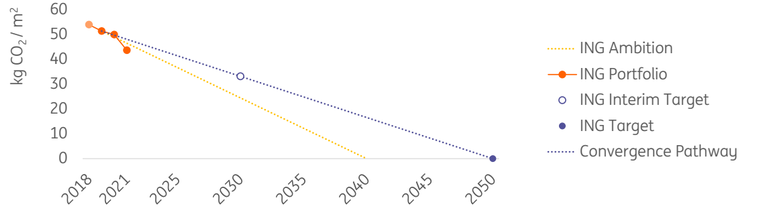
ING vs. NZE2050
-15.2%



Commercial Real Estate

NL Decarbonisation Pathway

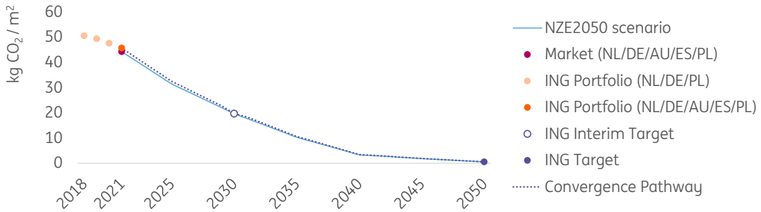
ING vs. pathway
-9.2%



Residential Real Estate

Global Decarbonisation Pathway

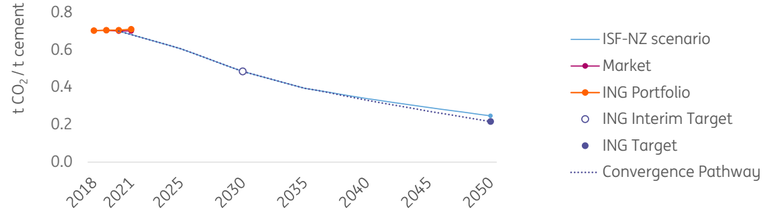
ING vs. scenario
+3.2%



Cement

Global Decarbonisation Pathway

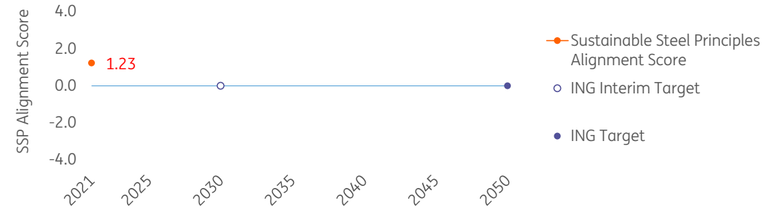
ING vs. pathway
+4.2%



Steel

Sustainable Steel Principles 2021YE

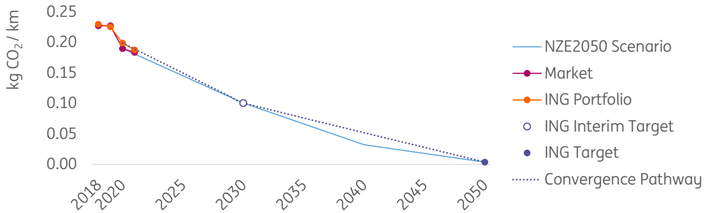
Alignment delta
+5.4%



Automotive

Global Pathway to Zero Tailpipe Emissions

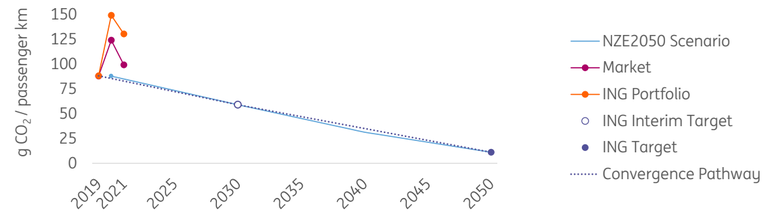
ING vs. pathway
-0.8%



Aviation *

Global Decarbonisation Pathway

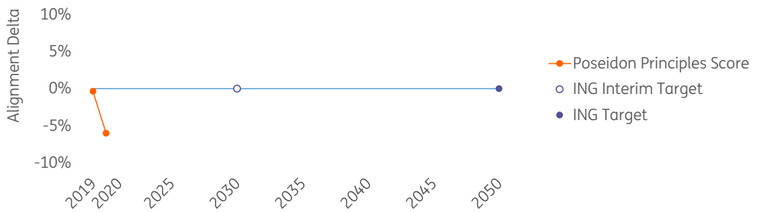
ING vs. pathway
+57.3%



Shipping

Poseidon Principles 2020YE

PP score
-6.0%



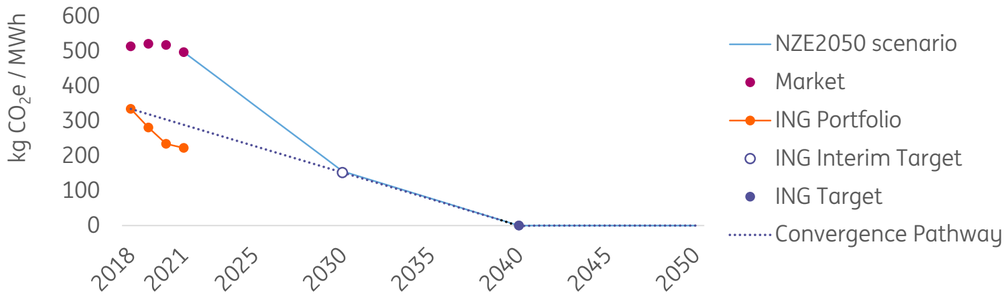
* Despite a significant reduction in absolute emissions in 2020 and 2021, the aviation sector experienced a severe fluctuation in emission intensity due to Covid-19. Please refer to the sector deep-dive for further information.

Power generation

€ 8.9 billion
Outstanding in scope

-23.0%
Performance vs. 2021 net-zero benchmark

-53%
2030 reduction target vs. 2018

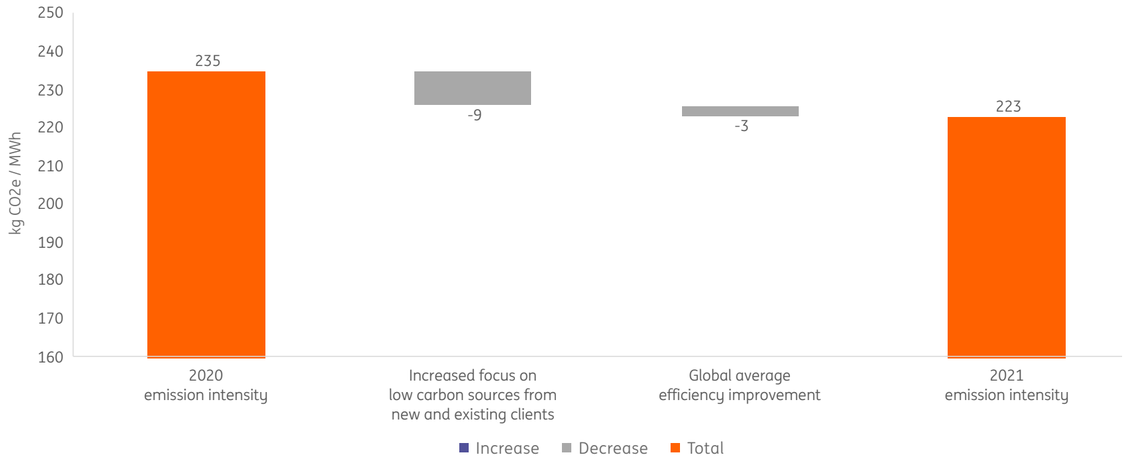


2021 Performance

As part of our NZBA commitment, in 2022 ING set an interim 2030 target for our power generation portfolio. Benchmarked against the latest IEA NZE2050 scenario energy transition pathway, this is a more demanding reduction target for emissions intensity than the benchmark we used in previous years. In the NZE2050 scenario, global power generation leads the way by achieving net zero emissions in 2040, to enable the global economy to achieve net-zero emissions by 2050. The emissions intensity of ING's power generation portfolio has continued its steady decline and has already decreased by 33% since 2018, which is on track to meet our 2030 interim target corresponding to a 53% reduction. This is due to our concerted efforts to support clients investing in renewables and ING's strict policy since 2017 to cease new financing of coal-fired power generation, with a goal to reduce existing exposure to close to zero by 2025. Specifically, in 2021, the following chart shows which factors contributed to the emission intensity decrease compared to last year. The main drivers behind this year's positive performance, accounting for more than 75% of the yearly improvement, are our focus on growing renewables[5] and our existing clients transitioning to less carbon-intensive sources. At the same time, the improvement in global average efficiency translated into lower emissions released into the atmosphere while generating electricity, contributing to an even lower emission intensity.

5 See the 'Sector transition plans' section for more details on our focus on renewables.

Figure 6 2021 performance breakdown: Power generation



How we steer our portfolio

ING's Energy Sector covers clients in conventional and renewable power generation, and energy storage. Through continued engagement with these clients, we support innovative technologies and new market opportunities, helping accelerate the energy transition. Our client base is diverse, ranging from global to local, from broad integration across the value chain to specific niches, and from state-owned enterprises to public and privately owned companies.

The Sector's specialist Renewables and Power, and Utilities teams work alongside ING's Energy sector-led, multi-disciplinary New Energy Technologies Centres of Expertise, which bring focus and resources to areas of new opportunity, such as hydrogen, energy storage, and carbon capture and storage.

Sector transition plans

Our power generation portfolio is already fully on track with the Paris Agreement's most ambitious climate goal of limiting global temperature increase to 1.5 degrees this century, using the IEA's NZE2050 scenario as the benchmark. Nonetheless, ING will continue to put in practice its strategy, which is already yielding positive results, to support the financing of renewable energy. To do so, ING recently disclosed its ambition to grow commitments to new financing of renewables by 50% by year-end 2025 (vs. year-end 2021).

Strengthening the path to net zero in ING's Energy portfolio

In its World Energy Outlook 2021 Report, the IEA stresses that a massive and immediate investment in clean and efficient energy is needed. The NZE2050 scenario outlines that if such investments are made, demand for oil and gas will reduce, and there will be no need to develop new oil and gas fields after 2021.

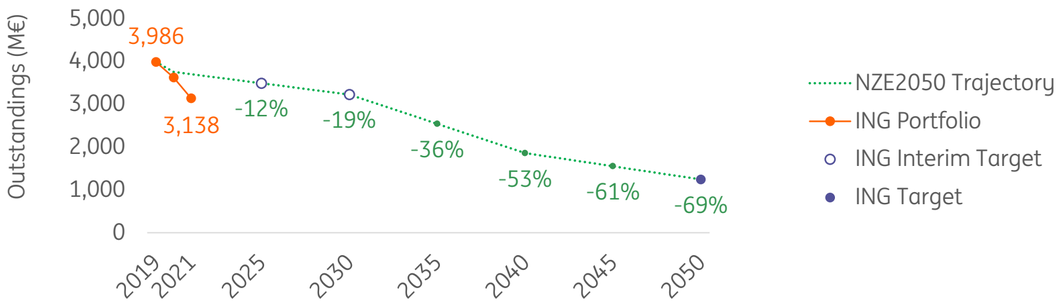
To strengthen our net-zero portfolio alignment commitments and to support the rapid increase in renewables investment that the world needs, ING announced in March 2022 that, together with the goal to grow commitments to new financing of renewable energy by 50% by year-end 2025 (versus year-end 2021), ING will not provide dedicated upstream finance (lending or capital markets) for new oil and gas fields approved for development after 31 December 2021.

Upstream oil & gas

€ 3.1 billion
Outstanding in scope

-15.2%
Performance vs. 2021 net-zero benchmark

-12%
2025 reduction target vs. 2019



2021 Performance

Over the course of the year, the Terra exposure decreased from €3,623 to €3,138 million. This steep continuation of last year's downward trend is explained by the combination of planned portfolio management with unusually low drawings under committed facilities, due to high prevailing oil and gas prices. In reaffirming ING's commitment to the 'portfolio financing trend' reduction commitment towards our 2025 and 2030 interim target and 2050 final goal, we note that if oil and gas prices fall in future years, the actual outstandings under currently committed facilities may increase, although the total portfolio will remain below the trend line required for 2030 and net zero by 2050 alignment.

How we steer our portfolio

For oil and gas, the alignment metric is the 'portfolio financing trend' which will require a continuing reduction in the size of the upstream oil and gas portfolio in line with the rate of reduction in global oil and gas production set out in the transition pathway of IEA's NZE2050 scenario. Interim targets for 2025 and 2030 are to reduce the upstream oil and gas portfolio by 12% and 19% respectively, from our 2019 target-setting baseline. The NZBA guidelines for the oil and gas sector, which will set minimum standards for the whole sector value chain, are currently being developed. We will adopt these for future target setting and reporting when they are finalised.

Since joining the NZBA in August 2021, ING has been an active participant in the working group established to develop guidelines for a common approach for NZBA banks to set net zero targets for their oil and gas sector portfolios. The guidelines

are expected to be finalised and approved by the NZBA Steering Group before year-end 2022. Until the final guidelines are published ING will continue to use the PACTA methodology for upstream oil and gas target setting and portfolio steering.

Sector transition plans

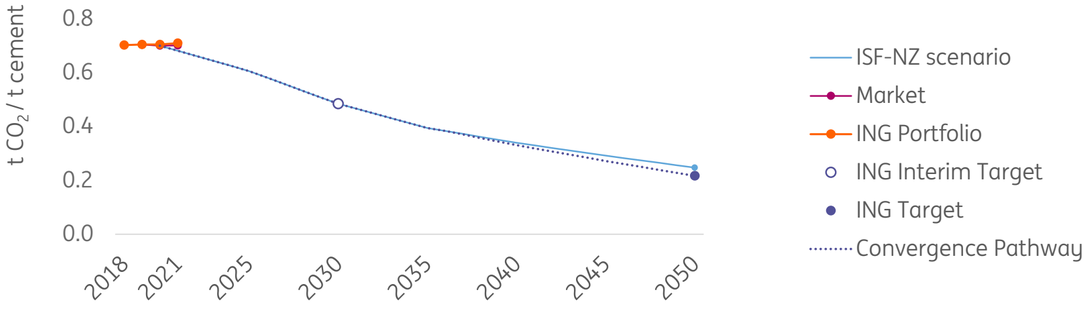
As with power generation, our upstream oil and gas portfolio is aligned with the Paris Agreement's goal of limiting global temperature increase to 1.5 degrees Celsius, using the IEA's NZE2050 energy transition pathway scenario as the benchmark. Under this scenario, oil and gas will still play a role in the global economy of 2050, but at much reduced levels of production. The IEA's scenario indicates that by 2050 oil and gas production will need to decline by 69%. We note that if oil and gas production reduction requirements become more demanding in future updates to the NZE2050 scenario, we will adjust our interim and final portfolio volume reduction targets accordingly. The importance of aligning with NZE2050 scenario transition pathway cannot be understated as in addition to the achievement of the UN's Sustainable Development Goals (SDGs) on Climate Action (SDG 13) it also takes into account Clean Air (SDG 3) and Affordable and Clean Energy (SDG 7).

Cement

€ 337 million
Outstanding in scope

4.2%
Performance vs. 2021 net-zero benchmark

-31%
2030 reduction target vs. 2020



2021 Performance

The 2021 emission intensity shows a moderate increase compared to 2020, resulting in ING's portfolio being close to the global market (+1%) and above the 2021 point of the convergence pathway to net zero (+4.2%). As the following chart shows, the performance of ING's clients improved over the year, meaning they now emit less CO_2 per ton of cement produced. However, the overall reported intensity of ING has increased. This is due to two factors: (1) the outstanding volatility, which depends on when and by how much credit lines are utilised by our clients, hence assigning a different weight to each client at the moment of measurement, and (2) data quality improvements, meaning we now have better information to assess where our clients are. The balance between these three factors is depicted in the below chart.

Figure 7 2021 performance breakdown: Cement

While ING has already been taking relevant measures to support its cement-manufacturer clients in decarbonising their activities, and hence be able to meet its own net-zero targets, investments in sustainable solutions such as carbon capture storage and usage usually take longer for this industry to come into effect and to show progress. Nonetheless, ING continues its efforts towards meeting its targets.

How we steer our portfolio

Following the successful set-up of the Construction sector to steer and drive activities across the value chain, clients in scope have been segmented and monitored across four pillars of which cement is one. For cement subsector, our strategy is to continue business with existing clients that demonstrate sustainable practices and to be selective about new clients, depending on their commitment to a decarbonisation pathway that will allow us to further steer our portfolio towards net-zero targets by 2050, in line with ING's overall ambition.

To meet concrete targets within our broader sustainability framework, we set out KPIs to be included in Sustainable Finance Frameworks for cement manufacturers. These include targets to be reached by 2030, such as bringing CO_2 emission intensity well below 0.500 ton of CO_2 per ton of cement and setting a minimum level for both alternative fuels and clean energy sources. We are pleased to see that major industry players meanwhile committed to reduce respective CO_2 emission intensities well below this level, with our client Heidelberg Cement recently committing to the industry's most ambitious target: 0.400 ton of CO_2 per ton of cement by 2030.

Sector transition plans

Material sustainability topics for the cement sector include not only decarbonisation, but also biodiversity and the circular economy. Our biodiversity strategies target a net-positive impact on biodiversity, through reducing net water usage for example, eliminating water pollution, implementing biodiversity management, improving biodiversity scores on managed land, and implementing plans for rehabilitation on large land-use sites. Actions around a circular economy include recycling concrete and building materials during demolitions. Leveraging on our sector expertise, we are working to implement additional KPIs in these new areas, strengthening our clients' engagement with sustainability.

As a tangible example of how ING supports sector transition plans, global cement producer CEMEX appointed ING as its sole Sustainability Coordinator, underlining our leading position in the cement sector, particularly in the field of providing sustainable finance solutions. ING played a significant role in the creation of CEMEX's first Sustainability-Linked financing framework in the fourth quarter of 2021, which focuses on climate action initiatives to align its corporate sustainability commitments to its financing strategy, as part of its Future in Action programme. The Framework sets clear targets: to reduce net CO_2 emissions to 0.520 tons by 2025 and to below 0.475 tons by 2030, per ton of cementitious product; for 40% of its power consumption to be from clean energy sources in cement production by 2025, and 55% by 2030; and for 43% of its fuels to be from non-fossil sources by 2025, and 50% by 2030.

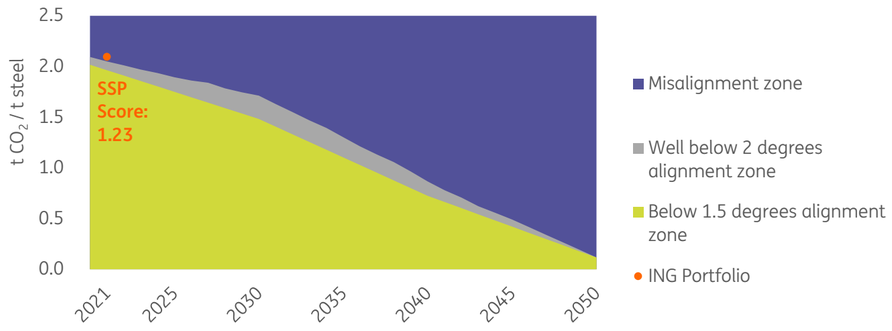
CEMEX identified KPIs that are material to the cement industry and established ambitious Sustainability Performance Targets (SPTs) representing important CO_2reduction levers in CEMEX's carbon mitigation strategy. The framework, praised by Sustainalytics for the 'prospective of achievement' of its targets, has been adopted by CEMEX for a set of different financing solutions ranging from lending, working capital solutions and interest rate derivatives.

Steel

€ 2.9 billion
Outstanding in scope

5.4%
Performance vs. 2021 net-zero benchmark

0
2030 target SSP score



2021 Performance

As from this year, we report our climate alignment using the Sustainable Steel Principles ('SSP') methodology. This framework was developed by a group of five international banks led by ING and facilitated by the Center for Climate-Aligned Finance at RMI, in consultation with over 80 representatives from industry, NGOs and other institutions. It represents a crucial step towards standardised reporting in CO_2 for the steel industry, enabling financial institutions to objectively compare steelmakers performance and report on their portfolio alignment (see more information about SSP in the Box Out below) versus two net-zero emissions trajectories.[6]

In this very first year our portfolio alignment score ('PAS') is 1.23 which, for ING[7], represents an emission intensity of 2.10 t CO_2/t steel. The fact that the PAS is slightly above 1 signifies that we exceed the well below 2 degrees trajectory. Measured against the below 1.5 degrees benchmark, which for 2021 would be 1.99 t CO_2/t steel, ING's portfolio is 5.4% above the benchmark. Our score reflects that fact that a significant portion of our portfolio consists of companies in emerging markets, which generally are more carbon intensive and the fact that as of today there are no significant low carbon steel producers.

Both the performance and the carbon intensity are not directly comparable with those reported in previous years, as the SSP methodology includes emissions beyond the standard scope 1 and 2 which were used previously. For this reason, 2021's

6 The trajectories represent a net-zero scenario with no overshoot, equal to 1.5, and a net-zero scenario with low overshoot, equal to 1.5 to 1.6, defined here as 'well-below-2-degrees'.
7 As the SSP corrects for average scrap use in the portfolio, depending on those levels' targets may differ from institution to institution.

performance will be ING's starting point to steer its portfolio towards its first 2030 net-zero target. This target is an alignment score of 0, which aligns with the IEA's 1.5 degrees aligned net zero trajectory.

How we steer our portfolio

As a strategic partner to our clients, our immediate objective is to understand where they are in terms of carbon intensity, and what their strategic targets are for 2030 and 2050. This will allow us to engage in meaningful dialogue with them, not just around strategy and investments, but also concerning how they can best match their strategy to their funding profile. Our dialogue will also highlight where changes are necessary. To this end, we have created a team dedicated to the steel sector that prioritises client initiatives; this team leads the SSP initiative (see box out below) and engages regularly with clients across the globe on sustainability and strategy.

Sector transition plans

Decarbonising the steel industry will be highly challenging. This is due to the highly competitive and cyclical nature of the sector, and the fact that investments required to decarbonise will be very significant and will require complete revamping of existing plants. In addition, 'green' production methodologies are expected to be costlier than the currently prevailing ones. According to one estimate, total investments required will be $1.1trillion until 2050.

In our view, successful decarbonisation will depend on a number of factors, of which the implementation of effective regulatory regimes is the most important. These should (1) stimulate decarbonisation by setting carbon pricing (and phasing out of free carbon credits, such as the EU ETS is planning); (2) facilitate the increased production of renewable energy by for instance reducing permitting periods; and (3) stimulate the creation of a hydrogen infrastructure. In addition, buyers of steel will have to be prepared to pay more for 'green' steel and also show a willingness to sign long term contracts to facilitate the investments required.

Currently, there are few decarbonisation projects in place, with producers being held back by technological and cost constraints. However, we expect this to change over the next five to ten years as the first of such projects will appear and have a stimulating effect on the rest of the sector.

ING believes that lower carbon production could represent a significant competitive advantage in the steel sector. However, given the competitive and cyclical nature of the market (the price of steel being particularly sensitive to fluctuations in the economy), we remain careful when selecting who to provide funding to. Typically, we bank steel companies with clear competitive advantages, such as low costs or high technological specialisation and supply chain integration. Increasingly carbon intensity will become part of those parameters.

We are currently considering financing a number of greenfield green steel projects, which could be fully operational by 2025 – 2026. Financing these would be a significant step and improve our alignment. ING will be actively looking to support clients in these types of projects in the future.

Sustainable STEEL Principles

Steel is an emissions-intensive sector, accounting for roughly 7% of GHGs, with demand projected to grow 30% by 2050. In order to avoid carbon lock-in, the decarbonisation of this hard-to-abate sector is both demanding and urgent. Along with four other banks and RMI's Center for Climate-Aligned Finance, ING has led the development of the framework for The Sustainable STEEL Principles which provide a sector-specific measurement and disclosure framework for banks, enabling lenders to support the decarbonisation of the steel sector, and assess climate progress, compatible with NZBA guidance. This was reviewed by over 80 institutions across finance, industry, and civil society, including 30 steelmakers and industry associations.

Committing to the five Sustainable STEEL principles means that ING intends to:

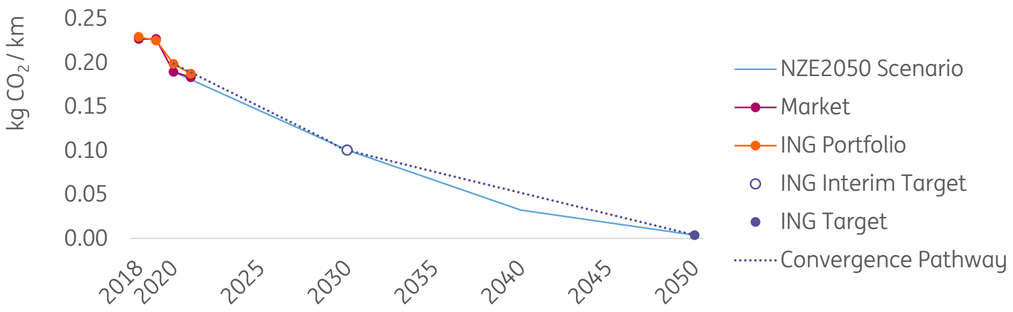
1. Annually measure and report the climate alignment of our steel lending portfolios according to the Sustainable STEEL Principles guidance and methodology;
2. Annually publish portfolio climate alignment scores, a brief narrative, and the percent of our portfolio represented by emissions reduction targets;
3. Source data from clients, or when not available, from an approved third-party data provider;
4. Engage with our clients to maximise real economy impact by advancing emissions reductions in line with 1.5°C;
5. Be a leader by setting steel portfolio targets informed by the Principles, updating the Principles as data evolves, and utilising the Principles for advocacy purposes, in the interest of decarbonizing the steel industry. The SSP will be formally launched on the 23rd of September at New York Climate Week.

Automotive

€ 2.4 billion
Outstanding in scope

-0.8%
Performance vs. 2021 net-zero benchmark

-49%
2030 reduction target vs. 2020

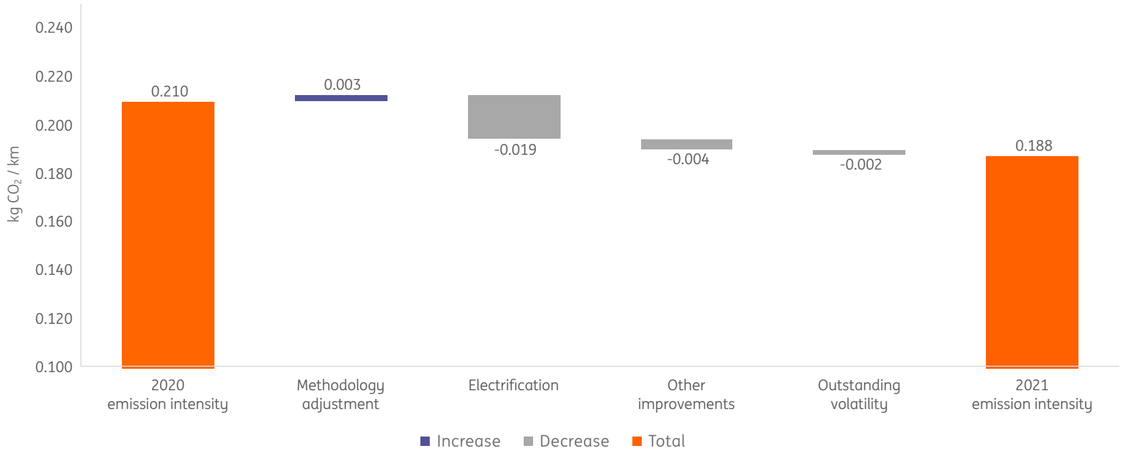


2021 Performance

In 2021, our emission intensity decreased for the third year in a row and is now at 187g CO_2/km, placing our portfolio below the convergence pathway to the net zero aligned 2030 target. We note that in the graph above, we restate the 2020 portfolio emission intensity from the 210g CO_2/km reported last year to 199g CO_2/km for 2021. This restatement has been made, while setting new decarbonisation targets in line with net zero by 2050, as we could make use of more accurate data for the year 2020, which is the starting point of the IEA NZE2050 scenario. This will allow for a fair comparison between the IEA NZE2050 scenario starting point and ING's portfolio starting point, thereby avoiding inconsistencies.

The main driver behind the improvement from 2020 to 2021 is the higher percentage of electrified vehicles, both electric and hybrid, produced by our clients, which leads to an overall less carbon-intensive fleet. The other drivers that contributed to this decrease are, with a minor impact, (1) the volatility in outstanding, which reflects the relative share that each client has in our portfolio, and which fluctuates continuously depending on how and when our clients use their credit lines, and (2) other general improvements to the emission factors of our clients, which can be related to both better performance, meaning that the produced vehicles emit less CO_2 than before, or changes to the company structure and the owned manufacturing plants (such as the overall fleet improving its average emissions due to the acquisition of another manufacturer that produces more efficient ICEs). These changes were only partly offset by a methodological improvement, as we are now using more accurate and granular emission factors per client instead of global market average. The chart below provides with an overview of how all the drivers contributed to the emission intensity decrease.

Figure 8 2021 performance breakdown: Automotive



How we steer our portfolio

Since 2019, ING has disclosed key alignment indicators and targets for the Light Duty Vehicles (LDV) sector in line with our commitment to the Paris Agreement climate targets. To date, the sector has followed PACTA methodology, which uses the technology transition roadmap published by the IEA outlining what needs to happen for these targets to be reached within the sector. For 2021, the technology mix indicator for our portfolio is 4.2% electric vehicles (EVs), 14.9% hybrid vehicles and 80.9% internal combustion engine (ICE) vehicles, which has outperformed the market technology mix for 8.3% hybrid vehicles and 86.0% ICE vehicles.

Sector transition plans

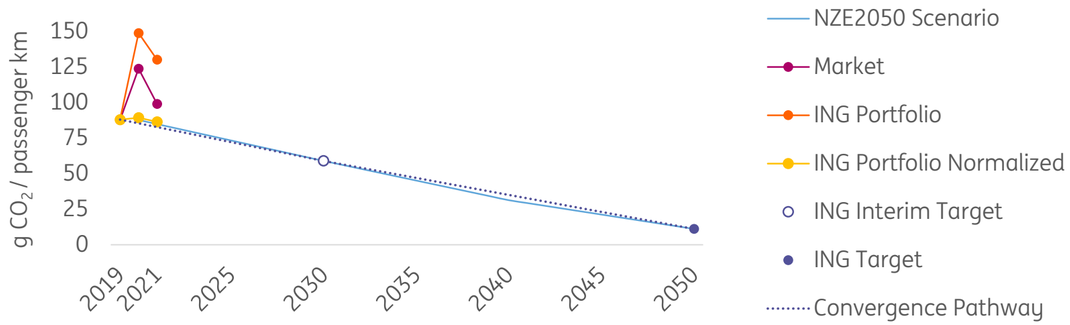
In line with our commitment to sustainability and supporting the global transition to greener energy, ING expects its automotive clients to have a strategy in place outlining a path towards lower-carbon emission in their products, production, and supply chain, and/or an aim to align with net-zero 2050 ambitions. Despite the challenges that the industry is facing in transitioning at the pace required to meet the ambitious targets of the NZE2050 scenario, ING set short-term and long-term net-zero targets, in line with our commitment to the NZBA, with the ambition to support our clients in their transition.

Aviation

€ 3.1 billion
Outstanding in scope

57.3%
Performance vs. 2021 net-zero benchmark

-33%
2030 reduction target vs. 2019



2021 Performance

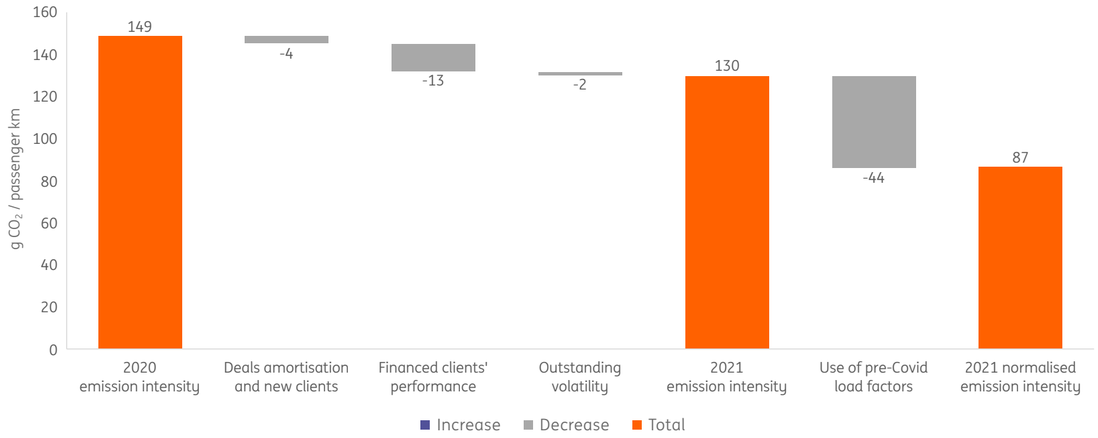
ING's global, secured aircraft finance portfolio has outstandings of roughly €3.1 billion, including 410 aircraft with an average aircraft age of 5.3 years. The calculation of emission intensities (CO_2 emissions per passenger-km per aircraft) is based on aircraft-specific information such as its number of seats and flight data from 2021 (average distance per flight), which is supplemented by the airline's load factor and publicly available fuel consumption data.

Since 2020, Covid-19 has had a significant impact on our measurements. While the pandemic led to a substantial reduction in absolute aviation emissions for the global aviation industry (in 2021 absolute emissions were 37% below pre-pandemic levels vs. to 49% in 2020), it had a devastating impact on relative efficiency. Flight distances shortened as long-haul and cross-border travel was restricted. In addition, load factors only rose from 65% in 2020 to 69% in 2021, while pre-pandemic stood at 82% in 2019. Both factors had a material impact on our measurements and contributed to the high volatility of our portfolio emission intensity.

Therefore, we have measured the portfolio's emission intensity based on 2021 load factor data as well as pre-pandemic 2019 load factor data, the latter as a way of normalising the data for the impact of Covid-19. This allows us to understand the degree to which our own actions compared to external conditions influence the emission intensity of our portfolio.

This chart depicts the detailed breakdown of the drivers behind ING's aviation portfolio performance:

Figure 9 2021 performance breakdown: Aviation



The waterfall chart illustrates that the drivers behind the decrease in emission intensity over the course of 2021 are (1) the natural development of the portfolio, constituted by the amortisation of older transactions and origination of new transactions with better-performing aircraft, (2) the increased operational efficiency of our clients, the largest positive impact of 2021, and (3) natural movements in loan amounts outstanding over the course of the year. As a result of these drivers, portfolio emission intensity decreased from 149g CO_2/passenger kilometre[8] in 2020 to 130g CO_2/passenger kilometre in 2021. Notwithstanding this significant improvement, the emission intensity based on 2021 load factors remains well above the IEA NZE2050 compared to pre-pandemic levels as is depicted in both the climate alignment graph and the waterfall chart. Taking into consideration the 2019 load factor, the 2021 loan book's normalised emission intensity of 86.6g CO_2/passenger kilometre is only slightly above the IEA's NZE2050 scenario pathway point (85.0g CO_2/passenger kilometre) as well as the convergence pathway point (82.9g CO2/passenger kilometre).

How we steer our portfolio

We continue to have frequent conversations with our clients on Terra and pathways for airlines to reduce their carbon footprint. These are fruitful discussions, where we cover ING's capabilities and its support on the client's transition pathway, current sector trends and their implications, and where we see the financial sector regarding sustainability in aviation heading. For now, and in the absence of scalable and commercially viable alternatives, we work together on financing the latest generation of aircraft, as these are typically up to 25% more fuel-efficient than the preceding

8 The metric 'passenger kilometre' is equivalent to the metric 'revenue passenger kilometer' or RPK, which is the metric for the number of kilometers travelled by paying customers.

generation. Around 47% of our loan book consists of these aircraft (vs. 38% at year-end 2020). With increasing societal awareness on carbon footprints, airlines have a clear incentive to acquire more energy-efficient aircraft which ING is keen to support.

Sector transition plans

Several long-term decarbonisation roadmaps have been published, such as the EC's Fit for 55, and most prominently the IEA's NZE2050, which we have as per this year adopted in our analysis. While the IEA NZE2050 prescribes restrained traffic growth and the adoption of high-speed rail as a replacement for short haul flights where feasible, both roadmaps require a significant growth in biofuel adoption: in the IEA's NZE2050, 45% of the total fuel use in aircraft is bio-kerosene.

Fit for 55, a set of EC legislative proposals which may become law as early as this year, aims to tax conventional aviation fuel for intra-European flights and requires airlines to pay for carbon credits, as free carbon allowances will be phased out. ING continues to explore further ways to support its clients into transitioning to less carbon-intensive future, in line with the roadmaps published by relevant authorities and institutions. This will also help in bringing our portfolio's emissions intensity in line with our net-zero 2030 and 2050 targets.

Shipping

€ 6.5 billion

Outstanding in scope (2020YE)

-6.0%

Performance vs. PP 2020 decarbonisation trajectory

0

Target vs. PP 2030 decarbonisation trajectory

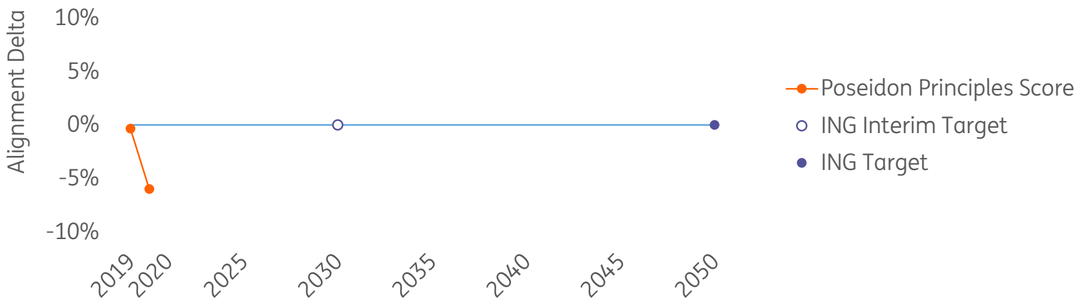
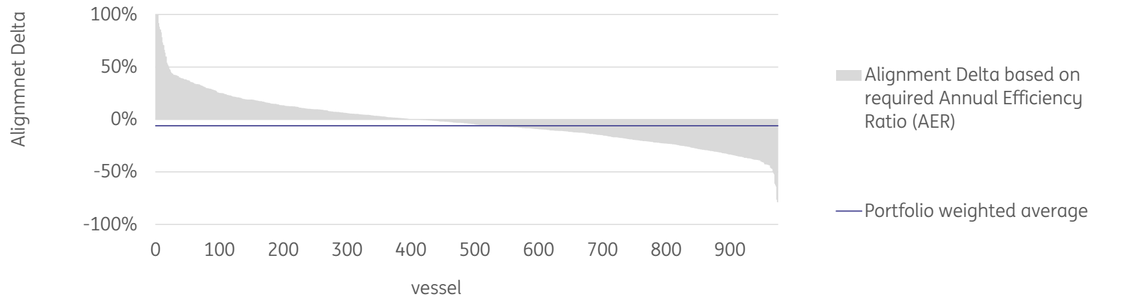


Figure 10 Alignment Delta Distribution



2021 Performance

In the third quarter of 2021, as part of our commitment under the Poseidon Principles (PP), we reached out to clients and received actual 2020 emissions data for approximately 94% of the ships we finance. After adding the debt per ship, we reported a debt-weighted portfolio Alignment Delta (AD) of minus 6.0% in the PP annual disclosure report released in December 2021. The negative AD means our portfolio outperformed the PP decarbonisation trajectory and validates our strategy of financing market leaders who focus on owning and prudently operating fuel-efficient tonnage.

As part of the PP methodology the actual emissions data used refers to 2020, but we feel that accuracy outweighs timing when informing our stakeholders on sector alignment. We are in the process of collecting actual 2021 emissions data for the next PP annual disclosure report to be released later this year.

The PP decarbonisation trajectories are regularly assessed to ensure their relevance. The PP trajectories for several ship types were updated after the International Maritime Organization (IMO), the UN agency responsible for regulating shipping globally, released its fourth GHG study, which provided new insights on ship size classification, methodology improvements, and transport demand.

How we steer our portfolio

ING is a founding signatory of the Poseidon Principles (PP), which is a framework for financial institutions to assess and report the climate alignment of their financed shipping portfolio with the ultimate goal of promoting international shipping's decarbonisation. ING adopted the decarbonisation trajectories agreed under the PP, which are consistent with the policies and ambitions of the IMO, including its ambition for GHG emissions to peak as soon as possible and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008.

Under the PP, a carbon emission intensity metric called the Annual Efficiency Ratio (AER) is measured annually for every ship financed by ING that falls under the purview of the IMO based on distance travelled, fuel consumed and its deadweight tonnage. The AD is then determined as the difference between that ship's measured AER and the AER prescribed by the relevant PP decarbonisation trajectory. By adding the debt weight per ship, a debt-weighted average AD is then calculated for ING's entire financed shipping portfolio and disclosed. If a ship's AD is zero or negative that means it contributes to meeting PP and IMO decarbonisation goals.

Currently 29 financial institutions are PP signatories, representing a bank loan portfolio of approximately $185 billion, over 50% of the global ship finance portfolio.

Sector transition plans

The AD of a ship and its potential impact on our portfolio is now an important consideration when ING decides whether to pursue a ship financing transaction. We continue to be client-led but are also actively engaging our clients in a dialogue regarding sustainability and decarbonisation of the shipping sector. We are heartened by the fact a large number of our clients are joining initiatives such as the Getting to Zero Coalition and the Call to Action for Shipping Decarbonisation and clearly signalling their ambition.

Clients that have a clearly defined strategy on these topics and put it into action will have a strategic advantage, which will eventually extend to their ability to attract ship financing. As a first step we are structuring Sustainability Improvement Loans (SIL), which include a loan margin incentive linked to carbon emission reduction and other ESG-related KPIs. In 2021 we acted as Sustainability Coordinator for seven SILs. We intend to continue offering SILs with material and meaningful KPIs to help drive shipping's decarbonisation.

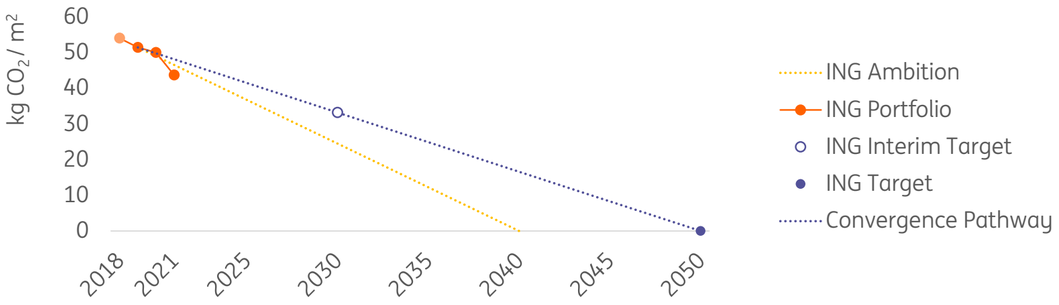
Apart from PP we engage with industry bodies to ensure decarbonisation remains high on the agenda and to explore ways forward. We also participate in sector transition initiatives such as the Silk Alliance, a cross-industry working group looking into decarbonising container shipping in a so-called green corridor between Asia and Europe. Green corridors were a key tenet of the Clydebank Declaration during COP26. The aim of the Silk Alliance is to drive development and adoption of certain ship types and carbon neutral fuels that make this possible. As shipping's focus shifts to net zero we expect targets and ambition levels to be amended accordingly and intend to play our part in making that a reality.

Commercial real estate

€ 10.9 billion
Outstanding in scope

-9.2%
Performance vs. 2021 net-zero benchmark

-35%
2030 reduction target vs. 2019



2021 Performance

We are pleased to announce that in 2021 we have seen a dramatic decrease in our emissions intensity for our commercial real estate portfolio in the Netherlands. This is largely due to an increased investment focus into green energy labels, in collaboration with strategic run off activities. We have also introduced an enhanced Corporate Facility Partners (CFP) model that integrates energy labels with consumption habits, providing more granular insights into our portfolio's emissions. This has resulted in an emissions intensity for the entire portfolio of 43.7 kg CO_2/m^2, representing a 12.7% decrease year on year (50.0 kg $CO_2/m^{2)}$. This downward trend is an overwhelmingly positive sign; however, we do not underestimate the challenge that lays ahead in reaching our 2040 ambition. The performance is related to our NL portfolio, where we aim to expand to additional countries in the coming years.

A linear progression has been used to demonstrate our current trajectory relative to our ambition, noting that in reality we anticipate our decarbonisation pathway will more likely resemble a hockey stick.

How we steer our portfolio

There is a heightened need for sustainability efforts in the real estate sector, with the Paris Climate Agreement an important driver of this need. This was noticeable this year as a raft of regulations were drafted in the Netherlands and elsewhere which we expect to come into force in the coming years. This has led us to embed sustainability even deeper into our sector strategy. Our refined sustainability strategy enables us to steer our portfolio towards greater climate alignment, ensuring we are best placed

to combat the impact of climate change on our commercial real estate portfolio. In addition to our sector transition plans and targets, we have developed key initiatives to further accelerate progress towards our ambitious goals.

In April 2021 for example, we launched our first sustainability loan for the sector, which provided finance to convert buildings to energy label A at a reduced rate of 1%. This first loan supported a client in the conversion of two retail buildings from energy label E to energy label A. We have seen great improvements in the development of this product in 2021, which motivate our clients to make their assets more sustainable. Our assistance extends beyond financing and includes a full suite of advisory services to help drive the best client outcomes.

One of the incentives that ING can use to steer its commercial real estate portfolio is by financing green loans. These green loans can be used as collateral to receive funding at discounted prices. This benefits both ING and its clients, as ING can then offer a lower interest rate to its clients for financing green buildings. As a result of such financing, we made significant contributions to UN SDGs SDG 13 (Climate Action), and 9 (Industry, Innovation, and Infrastructure). We continue to take important steps to enhance our sustainable debt strategy and see it as an important tool in supporting the strong growth of our sustainable real estate finance portfolio.

To further assist our clients in their transition to more sustainable operations, we look for ways to help them in making climate contributions that match their remaining emissions. This led us to launch a 'real estate forest' (Vastgoedbos) in September 2021 that enables clients to positively contribute to the environment by planting trees in the Netherlands and Bolivia. This initiative included a social element to help train farmers in Bolivia on a more sustainable agri-forestry culture and planting a tangible public forest in the Netherlands. In October 2021, together with our clients, we planted 30,000 trees in collaboration with a Dutch NGO 'Trees for All'. These trees were planted in the Dutch province of Limburg, and shortly after we commenced similar operations in Bolivia. These trees are estimated to contribute to the environment in a magnitude equal to more than 10% of the total loan book by the end of 2022.

We also developed an 'energy robot 2.0' application, giving customers granular insights into energy consumption activity relative to industry benchmarks. This new iteration is an improvement on the previous version since it removes complexity, and with it, certain security challenges. As a result, a frictionless, easy-to-use platform gives clients insight into their energy consumption patterns. Currently in pilot phase, roll out is expected for the second half of 2022.

We continue to work closely with clients to advise on, and help finance, their sustainability strategies, focusing our efforts primarily on improving existing buildings since they remain the most important element of meeting global climate goals in the commercial real estate sector. Many of our clients already have sustainability strategies in place that are designed to steer their assets towards alignment with the Paris Climate Agreement and/or net-zero carbon targets.

Sector transition plans

We stepped up our sustainability efforts this year and we aim to continue innovating and improving our practices. This is why in 2020 we set the ambition of being in alignment with the goals set out in the Paris Climate Agreement by 2040. To achieve this, we have created a series of milestones we aim to meet along the way:

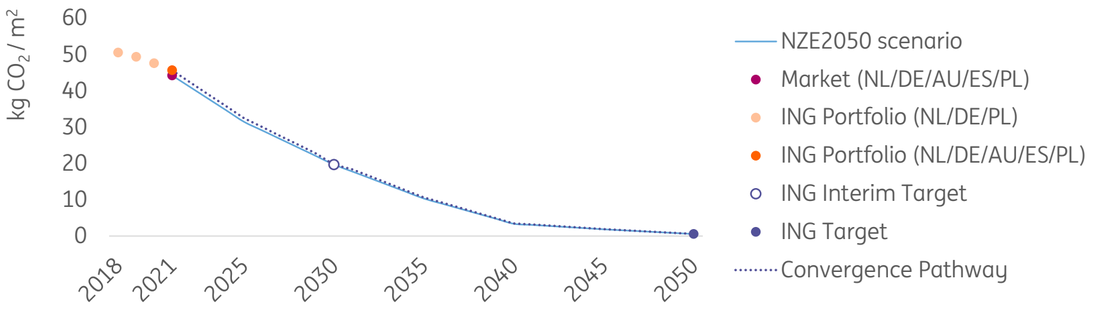
- Only recognise energy label A and above as 'green' from 2022.
- Integrate our energy transition approach into our credit risk policies in 2022.
- Identify an approach that seeks to shift all assets to energy label A label or above by 2025.
- Execute on our 2025 ambition to shift all assets to energy label A label or above by 2030.
- Identify a strategy that aligns with the goals set out in the Paris Climate Agreement by 2035.
- Have executed on this 2035 ambition by 2045.

Residential real estate

€ 297 billion
Outstanding in scope

3.2%
Performance vs. 2021 net-zero benchmark

-57%
2030 reduction target vs. 2021



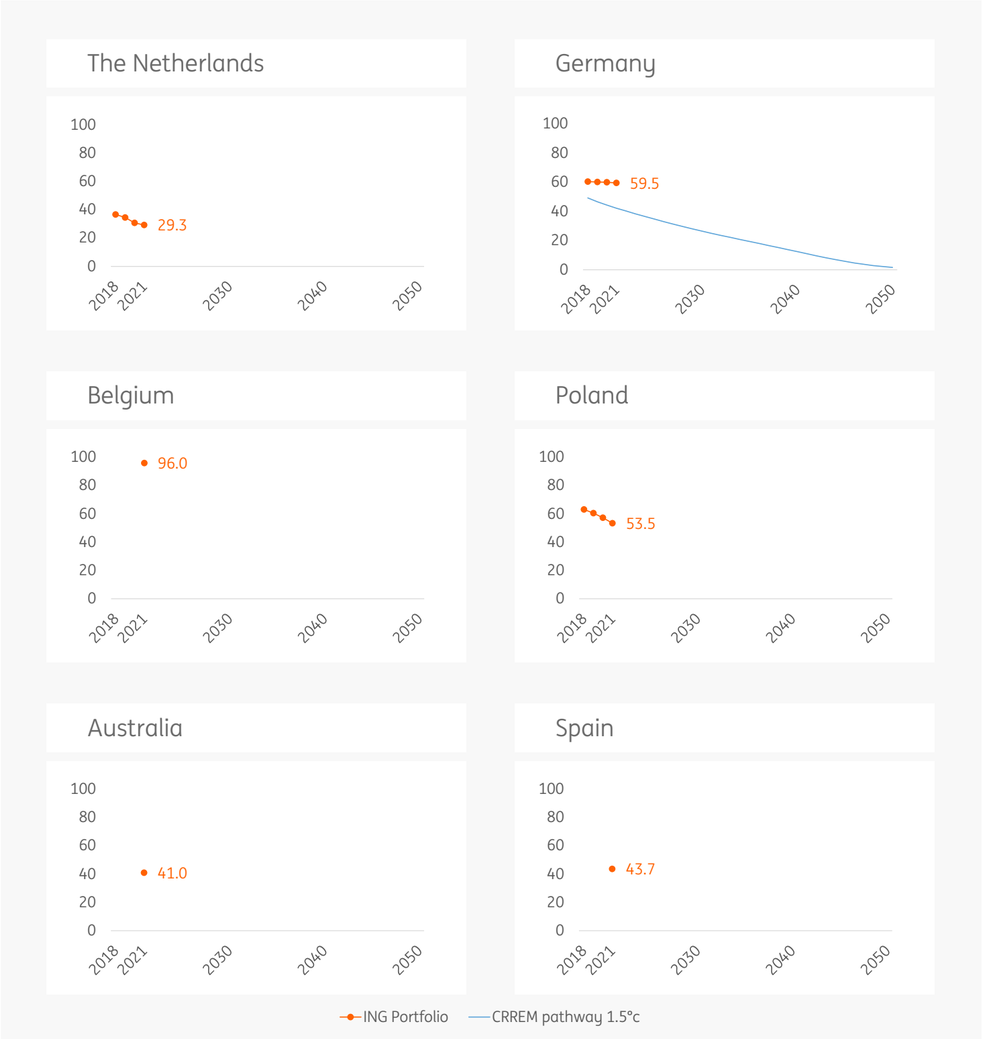
2021 Performance

Buildings account for 40% of EU energy consumption and 36% of energy-related direct and indirect GHG emissions, two-thirds of which can be attributed to residential housing. More than 95% of EU buildings are not energy efficient (below EPC A) yet only 1% of buildings undergo energy-renovation per year, according to BPIE. This is too little to reach the EU's climate ambitions and shows the need to address the transition of the existing building stock.

At year-end 2021 our combined mortgage portfolio (the Netherlands, Germany, Australia, Spain, and Poland) reached a CO_2 intensity of 45.7 kg per m^2. Belgium is not included in this total, as their way of calculating the emission intensity (including power generation) is not comparable with the other countries in our portfolio.

In previous years we compared our portfolio results with the Beyond 2°C Scenario (B2DS) for the EU. Starting this year, we can not only compare with the more ambitious IEA Net Zero by 2050 scenario, but also calculate a country weighted starting point, based on country level net-zero pathways, as published by Carbon Risk Real Estate Monitor (CRREM) in 2022. We have used the CRREM scenario to model the targets we describe below.

Figure 11 Residential real estate: country dashboard



In **The Netherlands,** we maintained our methodology of using EPC labels provided publicly by the Rijksdienst voor Ondernemend Nederland (RVO) and matching these with the mortgages in our portfolio. In 2021, our NL portfolio showed an improvement to 29.3 kg CO_2/m^2, an improvement of 5% from 2020. This result was partly due to our engagement with clients, and also due to a continued shift in the energy mix towards renewables and improving emission factors of those energy sources.

In **Germany**, we improved our methodology as we collected more energy performance certificates for new mortgages which contain the CO_2 emissions per building, resulting in a more accurate picture of the CO_2 emissions. The additional data shows that the CO_2 intensity for our portfolio is much higher than our model-based estimation which we have used in prior years, hence we have recalculated the baseline and results from 2018-2021. We continue to collect more data in order to make our calculations even more accurate in the coming years.

Along with the more accurate picture of the CO_2 emissions of our portfolio, Germany is the first market where the 1.5° CRREM national scenario has been applied. In adopting the CRREM scenario, we switched from an EU scenario to a national German scenario, where the starting point is much higher since residential buildings in Germany emit much more greenhouse gases compared to many other countries in Europe. The calculations now apply the updated boundaries of the energy usage of a building to include energy usage through cooking, lighting, and appliances as well as the transmission and distribution losses. The CO_2 intensity for heating, cooling and warm water, for example, would only be 50.75 kg CO_2/m^2.

What we also have learned is that the much worse starting point and the steep path to net zero in 2050 will be extremely challenging and calls for more radical approaches, especially in the modernisation of the existing building stock in Germany. We can have a major impact on building an ecosystem which enables modernisation, however, we also see that we cannot do this alone. We need government to support the transition through more subsidies for homeowners and policies that foster the development of the renovation supply chain.

In **Belgium**, we used an updated methodology to measure our portfolio, and show this reaching 96 kg CO_2/m^2 in 2021. We continued our partnership with Rock.Estate to measure the portfolio and improved the methodology in two ways. Firstly, we replaced the mean with the median as it is more robust against skewed distributions and outliers, both typical in EPC score observations, and secondly, we removed the use of the first two digits of the postcode as an additional factor related to geographical location. The reason BE shows as much higher than other countries, is that their EPC labels include emissions from the production of energy, where others focus only on energy consumed at the home.

In **Poland**, we noted a decrease in emission intensity, reaching 53.5 kg CO_2/m^2, an improvement of 7% from 2020. This is mainly related to new loan origination for buildings constructed with tighter energy efficiency norms. Slight improvement in national energy mix also contributed to this result. Data availability still remains one of the key challenges, where we continue working with other Polish banks to establish access to central EPC databases.

In **Australia**, we measured our portfolio for the first time, resulting in an outcome of 41.0 kg CO_2/m^2. We arrived at this outcome by looking at the residential energy consumption and emission factors in each of the States and Territories, sourced from the Department of Industry, Science, Energy, and Resources. We then matched the number of dwellings in each State and Territory in our portfolio and applied the average size in m^2 sourced from the energy ratings data from Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) to calculate the final intensity.

In **Spain**, we also reported for the first time, resulting in an outcome of 43.7 kg CO_2/m^2. In Spain, energy label data is not widely available, so we partnered with Sociedad de Tasación, an independent appraisal company with more than 36 years of experience in the Spanish real estate sector. Using their data, we were able to obtain a picture of the energy labels (A-G) of our mortgage portfolio. This was then used to map CO_2/m^2.

In line with the recommendations for mortgages outlined by PCAF, we continue to use energy labels as a proxy for properties' energy performance. We continue to collect EPC labels for new mortgages in our markets, meaning each year we will have an increasingly accurate picture. However, data on energy labels is still not widely available in most of our markets outside of the Netherlands. We therefore continue to develop our own means of determining CO_2 intensity for those markets using other available data such as building year, modernisation, and subsidised loans. In all markets we aim to align these methods with local peers and stakeholders.

We have focused on tracking primary energy demand of the homes, but some of our markets are including other energy use at the home into account, such as that used for cooking. Recently published joint guidance from PCAF, CRREM, and GRESB on measuring GHG emissions for real estate suggests that over time we should expand our focus to all emissions from within the building boundary and not only of the building itself. As scenarios and data become available to do this, we will explore how our reporting can adapt to accommodate for this ambition.

In the Netherlands, we also started a pilot with other banks to explore the option of using real energy usage data, which can improve our methodology beyond the use of energy labels. Shifting to a methodology based on real-energy use is key to uncovering the real picture of housing emissions, and we continue to urge governments and other stakeholders to work together to make data available for this purpose.

Steering our portfolio

We steer our mortgage portfolio at both global and national level, with a focus on our six largest mortgage markets (covering 96% of our mortgage book in terms of outstanding). This includes setting targets, forecasting portfolio change, and creating governance structures designed to steer on impact. Our governance approach includes key existing mortgage portfolio mechanisms within the bank, in addition to sustainability-focused executive steering committees, which are now active in the Netherlands, Poland, Germany, Australia and Belgium. In addition, our Global Retail Sustainability steering committee includes our Global Head of Sustainability, Global Head of Retail Products, and Heads of Retail from the Netherlands, Belgium, and Germany – our largest mortgage markets. We continue to evolve our steering approach to ensure we can actively track the impact of our products and services so we can find out which of our efforts have the biggest impact on improving energy efficiency.

Sector transition plans

Targets

This year we have adopted a net-zero scenario for the residential real estate sector, replacing the former beyond 2 degrees scenario used in former years. The new scenario is informed by the CRREM 1.5-degree Celsius scenario for the six markets in scope and by data for residential real estate derived from IEA global net zero scenarios.

This scenario shows that the houses in INGs portfolio across these markets should reach an average energy efficiency of 0.6 kg CO_2/m^2 by 2050 which is more ambitious than the previous 2.6 kg CO_2/m^2. The scenario also shows that houses in our portfolio should reach an average energy efficiency of 19.7 kg CO_2/m^2 in 2030. The scenario currently applies to five of the six markets in scope (Netherlands, Germany, Poland, Spain, and Australia). Belgium is for now excluded from the target until the issue of data comparability with other markets can be solved.

In line with our commitment under the NZBA, we can refer to these milestones as targets related to our portfolio, however there is a distinct difference between this sector and other sectors that we set Targets for under our Terra approach. In residential real estate, more so than other sectors, we foresee that the factors driving towards such efficiency milestones are influenced largely by the national energy mix of the

countries where those homes are located. Meaning that governments and institutions steering and installing new renewable electricity capacity and shifting away from fossil fuels like natural gas, thereby greening the energy mix available to homeowners, is the most important factor for the residential real estate sector to reach net zero.

Next to this the energy efficiency of those homes, as represented by their energy label is likely to be the next largest factor. This is something which we as a bank can influence as a joint stakeholder with homeowners, where the willingness and ability of the homeowners is critical to unlock progress. Finally, homeowners influence an additional factor, in terms of how much energy they use at home. This is likely to be the third most important element in reaching those milestones and requires the involvement of all members of a household to succeed.

To show the significance of how these factors relate, even if all homes in our portfolio were label A or equivalent in the six markets by 2030, houses in our portfolio would not reach the milestone described above unless a significant and rapid greening of the grid continues in all countries, and homeowners consciously use less energy. At the same time, it is possible that a greening of the energy mix in many markets could carry the sector well towards the targets without major improvements to the energy label composition.

Like in other sectors, we take an inclusive approach in empowering our customers to improve their efficiency. We do not see our role as a bank to limit finance to customers with G and F label homes for example, where doing so may show positively in our portfolio reporting but would not create real-world change to helping homeowners' transition. Should a national government regulate minimum energy labels for example, in line with the EU's Energy Performance of Buildings Directive, such as barring G label properties from 2030 and F labels from 2033, then we as a bank can support customers with those labels, facilitating them in financing their renovations ahead of those deadlines, but for now it is not our place to directly exclude such houses from access to our lending.

In that sense we will target our efforts towards more products, services, and partnerships to encourage our mortgage customers to make the required changes, where we report on our efforts in this space within this report.

For these targets to be realised in the real estate sector it's important for all stakeholders, including banks, governments, industry stakeholders, energy providers, and homeowners to increase our efforts and collaboration in years to come. In publishing these milestones, we aim to further critical discussion among the key stakeholders for how we can jointly achieve the sector ambitions.

In the coming years we plan to evolve and add metrics to our reporting that can clearly demonstrate INGs best efforts in empowering our customers to improve their energy labelling through our financing and services. We fully expect the scenarios applied by CRREM, IEA and industry stakeholders to change in the coming years and plan to adapt our application of these accordingly.

Products and Services

In order to leverage our financing toward net zero, we have set a target that green alternatives for our key retail products will be offered in all markets by 2025.

In 2022 in the Netherlands and Germany, we launched new Eco Mortgages, which offer a discount, of 10 basis points in Germany and 15 basis points (energy label A+ and higher) or 10 basis points (energy label A) in the Netherlands, for homes with energy labels of A and above. In the Netherlands this was offered to both new and existing customers with those labels. We also launched an Eco mortgage in our Italian market in 2022. This accompanies our Eco Mortgage in Poland, which was recently redesigned in order to adjust towards some of the requirements under the EU Taxonomy (EUT). ING is planning to roll out Eco Mortgages in all countries where we offer mortgages product model in all mortgage markets, and to align our definition of eco-mortgage products with the EUT definition of Green Mortgages.

However, in order to achieve net zero, we need to empower customers in homes with lower energy labels in their eco renovations. ING also continues to tackle this challenge, where we have lending products in place in both Belgium and Poland for customers that are renovating to improve the energy label of their home by for example improving insulation or adding solar panels. In the Netherlands, clients can also extend their mortgage loan to cover additional eco-renovations. Further eco-renovation products are planned for launch in Romania.

We continue to build our customer advisory services. In the Netherlands, our mortgage advisors received external training on advising clients on how they can improve the sustainability of their homes. This is then discussed in every mortgage consultation. Furthermore, ING intensifies the use of a tool where people can not only become aware of the improvements they can make, but also can have them realised. ING also participates in the National Insulation Week programme of the Dutch government.

In Germany we launched a renovation calculator with KfW bank in September 2021, where ING customers are offered insights into what sustainability measures they can take in their homes. Traction since then has shown growing relevance for customers, where those taking part have mostly implemented the suggested measures. The calculator will now be rolled out gradually to all our brokers to reach larger customer groups.

While our products have shown the promise of change to come, we note that demand among clients is still not at the level required to drive the transition. We continue to call on governments to implement ambitious and consistent legislation that mandates transition milestones for residential real estate.

Financed emissions

Next to emission intensity metrics, we also monitor our financed emissions to complement climate disclosures. Financed emissions are absolute emissions associated with our lending and investment activities, also known as absolute GHG scope 3 category 15 emissions. For more details on what this metric entails, please refer to the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Standard.

Table 4 Overview of ING's absolute missions per asset class and business unit

Sector	Outstanding in EUR billion	Measured in EUR billion	Outstanding coverage	Financed emissions in kt CO_2e	Economic emission intensity in t CO_2e/€ mln	PCAF data quality score
Residential Real Estate (Mortgages)	311.4	310.2	99.6%	7,515	24	3.8
Commercial Real Estate	35.4	N/A	-	-	-	-
Business Loans – Wholesale banking	263.9	263.5	99.9%	37,431	142	4.3
Business Loans – Retail banking	86.9	86.9	100%	10,791	124	5.0
Total lending in scope	**697.5**	**660.6**	**94.7%**	**55,737**	**84**	**4.1**
Lending out of scope	60.7	-	-	-	-	-
Total Lending in ING	**758.2**	**660.6**	**87.1%**	**55,737**	**84**	**4.1**
Total Equity in ING	**4.2**	**3.5**	**83.8%**	**186**	**53**	**4.9**

Our estimations were performed using PCAF compliant methodologies and cover 94.7% of lending activities covered by the PCAF methodology, including both wholesale and retail banking at year-end 2021. This resulted in an estimate of 56 million tons of CO_2e, including our clients' scope 1 and 2 emissions. The remaining 5% of our lending activities is related to Commercial Real Estate, which we aim to disclose in 2023. 0.1% of the Wholesale Banking book and 0.4% of the Residential Real Estate book are excluded from the analysis due to data quality reasons. Some lending activities are excluded from the analysis as they are out of scope for PCAF (e.g., central banks' exposure and personal loans). The estimation of our equity book, including ING's stake in other companies, is at 0.2 million tons of CO_2e.

Table 5
Detailed breakdown of our emissions associated with our Wholesale Banking book

NAICS Sector	Outstanding in EUR billion	Measured in EUR billion	Financed emissions in kt CO_2e	Relative contri-bution	Economic emission intensity in t CO_2e/€ mln	PCAF data quality score
Accommodation and Food Services	0.9	0.9	10	0.03%	11	4.5
Admin, Support, Waste Management and Remediation	3.9	3.9	238	0.6%	60	4.5
Agriculture, Forestry, Fishing and Hunting	0.6	0.6	423	1.1%	672	4.9
Arts, Entertainment, and Recreation	0.3	0.3	3	0.01%	9	4.6
Construction	3.8	3.8	55	0.1%	14	4.5
Educational Services	0.1	0.1	1	0.003%	11	4.6
Finance and Insurance	101.7	101.7	40	0.1%	0	4.8
Health Care and Social Assistance	0.9	0.9	6	0.02%	6	4.4
Information	10.5	10.5	116	0.3%	11	4.5
Management of Companies and Enterprises	2.4	2.4	56	0.1%	24	4.7
Manufacturing	38.1	38.0	4,120	11.0%	108	4.3
Mining, Quarrying and Oil and Gas Extraction	8.5	8.4	6,563	17.5%	778	4
Other Services (except Public Administration)	0.2	0.2	5	0.01%	27	4.7
Professional, Scientific and Technical Services	3.2	3.2	53	0.1%	17	4.5
Public Administration	1.1	1.1	65	0.2%	61	5
Real Estate and Rental and Leasing	6.5	6.5	74	0.2%	11	4.7
Retail Trade	5.7	5.7	174	0.5%	30	4.4
Transportation and Warehousing	20.9	20.9	9,119	24.4%	437	4.5
Utilities	21.0	20.7	15,263	40.8%	736	4.4
Wholesale Trade	33.5	33.5	1,049	2.8%	31	4.3
Total WB	**263.9**	**263.5**	**37,431**	**100%**	**142**	**4.3**

Table 6
Extract of the financed emissions associated with the Wholesale Banking sectors covered via Terra[9]

Terra Sector	Measured outstanding in EUR billion	Financed emissions in kt CO_2e	Relative contribution	Economic emission intensity in t CO_2e/€ mln	PCAF data quality score
Power generation	10.5	11,593	50%	1,107	4.7
Oil & gas	3.4	3,448	15%	1,027	4.4
Cement	0.3	281	1%	825	4.2
Steel	3.5	757	3%	215	4.2
Automotive[10]	2.5	30	0.1%	12	4.0
Aviation	3.0	2,854	12%	944	4.7
Shipping	8.0	4,477	19%	562	4.7
Total Terra	**31.2**	**23,439**	**100%**	**752**	**4.6**

Data limitations and difference with 2020 figures

In ING's 2021 climate report, we estimated our financed emissions associated with the whole lending book to be 42 million tons of CO_2 at year-end 2020. The financed emissions results from last year are not easily comparable to this year's results due to the incomparability of the underlying data and improved methodology. This year we used the PCAF database to estimate our emissions. Re-stating 2020 absolute emissions by using the PCAF database means that ING's financed emissions are approximately

9 The outstanding may differ from the Terra reported outstanding. In this table, the overall outstanding of each client covered by Terra is considered. For Terra measurements, product filtering is applied. See page 51 for further information.
10 The low economic emission intensity in this sector is due to the current coverage of emissions of our clients, which include scope 1 and 2 only.

63 million tons of CO_2e at year-end 2020. In addition to the new database, we are now measuring our emissions with more granular data: the PCAF data quality score on year-end 2020 data was 5, while it is 4.3 on this year's analysis over year-end 2021 data. A decreasing score indicates improving data quality.

Through the new database and methodology, we observe a decrease in overall emissions associated with our lending book from 63 million in 2020 to 56 million tons of CO_2e in 2021. This decrease is mainly driven by the data accuracy increase for our WB book. It is important to note that such fluctuations are still to be expected in the coming years, until absolute emissions reporting becomes more accurate, granular, and standardised. More specifically, with higher data scores (e.g., PCAF score 1) the expected error margin on absolute emissions estimation is considered to be significantly lower than lower data scores (e.g., PCAF score 5). We will hence continue improving our measurements in order to report figures as accurately as possible.

Sustainable finance

Performance highlights

In 2021 we exceeded our target for the year-on-year growth of our sustainable finance business. Here are some of the highlights:

- We supported 317 sustainable transactions in 2021, more than double our 2020 performance of 139 deals.
- In 2021, we increased our number of sustainability-linked loans from 34 in 2020 to 147 in 2021. We supported the issuance of 95 bonds with a sustainability component and 45 green and social loans. Sustainable Structured Finance Transactions remained on a stable level of 18 transactions as well as Sustainable Investments with four transactions.
- Of the 317 sustainable finance transactions closed in 2021, 245 were in EMEA, 26 in Asia Pacific, and 46 in the Americas. And we saw some firsts: our first sustainable supply chain financing, our first circular product-as-a-service financing, our first green asset-backed security and our first green bond where circularity was the main theme.
- In the first half of 2022 we have supported 205 sustainable transactions of which 85 were Sustainability Linked Loans, followed by 54 bonds with a sustainable component and 21 green/social loans.

We expect the sustainable debt market will continue its growth into 2022, fuelled by the EU Taxonomy regulation and further accelerated by embedding our Terra targets into stronger bank-wide KPIs.

Sustainable finance targets

We are financing the transition within Retail Banking by:

- Providing green alternatives for our key retail products.
- Dedicating €1 billion annual new green financing in 2025 to SMEs and mid-sized corporates in the Netherlands. Targets for other countries remain to be determined.

Wholesale Banking: committing to mobilise €125 billion of sustainable finance per year by 2025

With this commitment, we capture the volumes of the following products that support our clients in their transition:

- Sustainability-linked loan products
- Green and social loans
- Green, social and sustainability bonds and sustainability-linked bonds
- Sustainable investments
- Sustainable structured finance transactions
- Sustainable improvement derivatives
- Advisory propositions for sustainable activities

The commitment makes a distinction between transactions where we are ESG lead (such as ESG coordinator or ESG structuring role) and transactions where we do not fulfil such a role (like when we are part of a consortium of banks). In cases where we are the ESG lead role in a loan, we record the pro-rata share (in case of multiple ESG leads) of the total transaction and if we merely participate, we only take our share into account. This methodology has been selected since if we are the ESG lead role in a transaction, we can pro-actively engage with our clients on their sustainability strategy, so our impact is more significant compared to a participation.

In more detail:

- Loan products: for loans such as sustainability-linked loans, green loans, in case we:
  - Only participate in a transaction with no ESG role, we limit ourselves to our own commitment.
  - When we fulfil an ESG lead role by structuring and/ or coordinating the ESG debt structure, we reflect (our pro rata share in) the full transaction since we mobilised the ESG transaction for our client.
    For example: in an RCF of €1 billion, we have a final take of €100 million. The facility is drawn for only €25million.
  - We are participant only: we register the €100 million;
  - We are the ESG coordinator: we register the entire €1 billion in case we are sole ESG coordinator, and our pro-rata share in case there are multiple ESG coordinators.
- Capital markets products: for the bonds we record in accordance with the role we take:
  - ESG lead role: if we are the ESG structurer or coordinator we take our pro-rata share of the full transaction, since we believe it properly reflects our contribution to support our clients to achieve their sustainability transition (for the avoidance of doubt: if we are the sole ESG structurer/coordinator we register the entire transaction, but if we for example are a joint structurer/coordinator with another bank, we only register the pro-rata part of the transaction as volume mobilised);

  - Other roles: when we are not fulfilling the ESG lead role, we only register our share of the bond, where we make a distinction between passive bookrunner roles and active bookrunner roles.

- Derivatives: for sustainable derivatives such as interest rate swaps we record the full notional amount hedged with ING. To prevent double counting, we exclude from the total any sustainable derivatives used to hedge sustainability-linked loans (or other securities) already included in our total.
- Sustainable Investments: for financing solutions provided by our Sustainable Investments team (equity and subordinated debt solutions), we report INGs final take in the transaction at closing.
- Advisory propositions for sustainable activities: we are increasingly asked to provide tailored ESG advice to our clients and we also address ESG as key part of our client engagements. When we provide such advice related to a financial transaction not yet captured as a ESG bond, loan or derivative, to avoid double counting we report:
  - The full transaction when we are the sole ESG advisor.
  - The pro-rata share if we fulfilled a joint ESG advisory mandate.

To realise our goal, we will actively steer on increasing the share of sustainable transactions and ESG lead roles in our overall number of transactions through companywide KPIs as well as ramping up our sustainable finance capabilities.

Climate and environmental risk

Risk identification and assessment – Qualitative assessment of transition and physical risk drivers per sector

Introduction

A heatmap is one way ING identifies short-term C&E risk; its risk drivers include physical risks and transition risks and are aligned with ECB categorisation. In the heatmap, we plot physical and transition risk drivers against a score of low, medium, or high, primarily based on expert judgement. The scores are assigned based on the potential financial impact of C&E risks on ING's portfolio, not on the general sector outlook. For example: a certain risk could be high for a sector but because ING doesn't operate in the geography where the risk is high, it could be low/medium in our heatmap. Our 2021 Climate Report provides more information on the methodology and risk drivers used in the heatmaps.

The risk assessments from the heatmaps have been incorporated in our business-as-usual risk management processes such as Sector Credit Risk Appetite Statements (CRAS) which set limits on the credit risk level ING is willing to undertake for a sector (see box out: Using heatmaps as input for managing credit risk) and the Sector Strategy and Risk Appetite (SSRA) Papers which determine the strategy for selecting where and how we fund clients in each sector.

Progress

In the latter part of 2020 and early 2021, we conducted the first phase of the heatmap assessment process, which covered most Wholesale Banking sectors and Retail Banking Mortgages, Consumer Lending and Business Banking portfolios. We disclosed an extract of the result in the 2021 Climate Report and our 2021 Annual Report. This year, the assessment for all Wholesale Banking sectors is complete. The assessment was conducted by the business lines and challenged by the second line, including ESR and SCOs. The heatmap across sectors was consolidated and then approved by the GCTP, the highest-level ING Bank body authorised to approve policies, methodologies and procedures related to Credit, Trading, Country, and Reputation Risks within ING Bank.

Table 7 Consolidated heatmap for Wholesale Banking sectors

Sector	Transition risk	Physical risk	EAD/Total WB EAD[11]
Building and Construction	Medium	Low	1.4%
Building Materials	Medium	Medium	0.6%
Mid and Downstream Oil and Gas	Medium	Low	4.1%
Offshore	High	Low	0.9%
Renewables & Power	Low	Low	3.3%
Traders – Energy	Low	Low	4.3%
Upstream Oil and Gas	High	Low	1.9%
Utilities	Low	Low	3.3%
Central Banks	Low	Low	7.5%
Commercial Banks	Low	Low	6.7%
Non-bank Financial Institutions	Low	Low	12.5%
Farming and Fishing	Low	Low	0.5%
Food and Beverages – Processing and Retail	Low	Low	3.5%
Traders – Softs	Low	Low	1.2%
Healthcare	Low	Low	0.9%
Pharma	Low	Low	1.1%
Chemicals	Low	Low	1.8%
Metals Machinery Manufacturing	Low	Low	0.6%
Other General Industries	Low	Low	0.9%
Other Manufacturing	Low	Low	1.9%
Fertilisers	Low	Low	0.1%
Metals Manufacturing	Low	Low	1.7%
Metals Mining	Low	Low	1.6%
Traders – Metals	Low	Low	1.9%
Real Estate Holding and Development	Medium	Low	0.3%
Real Estate Investment	Medium	Low	3.0%
Real Estate Property Management	Medium	Low	5.7%
Food Retail	Low	Low	1.0%
Household Products	Low	Low	<0.0%
Non-food Retail	Low	Low	0.9%
Personal Care	Low	Low	0.3%
Business Support Services	Low	Low	0.7%
Hospitality and Leisure	Low	Low	0.6%
Management and Administrative Services	Low	Low	1.2%
Management Science and Tech. Consulting Services	Low	Low	0.2%
Other Services	Low	Low	1.4%
Civic Bodies	Low	Low	<0.0%
Public Sector Entities	Low	Low	0.1%
Sovereigns	Low	Low	0.6%
Media	Low	Low	0.6%
Technology	Low	Low	4.0%
Telecom	Low	Low	3.5%
Aerospace	Low	Low	0.2%
Automotive	Low	Low	3.1%
Aviation	Low	Low	1.1%
Container and Logistics	Low	Low	3.0%
Rail and Road	Low	Low	1.1%
Shipping	Low	Low	3.3%
Other Utilities	Low	Low	<0.0%

11 The score scale shown here (Low/Medium/High) is different from that in the 2021 Integrated Climate Report as here we apply the revised aggregation methodology introduced together with the Sector CRAS limit (see footnote 13 for aggregation methodology).

Of the total Exposure at Default, 0.6% scored medium/high risk in terms of physical risk, and 17.9% scored medium/high in terms of transition risk.[12] We proactively focus on managing risks from exposures of medium/high risk sectors our risk management processes, such as Sector CRAS (see box out: Using heatmaps as input for managing credit risk) and the SSRA Paper.

Using heatmaps as input for managing credit risk

Sector CRAS set limits on the credit risk level ING is willing to undertake for a sector. Since July 2022, ING has started reducing how much a sector with a medium/high heatmap assessment score can grow. By doing this, we limit growth in sectors where climate and environmental risks are assessed to be significant and move funding towards sectors where heatmap assessment is low and/or to activities which can demonstrate a positive contribution to climate objectives or sufficiently mitigate the climate and environmental risks that sector faces. Similar approach with soft limits is implemented for our Business Banking (mid-corporates and SMEs) segment.

It should be noted that the scores for physical risk are the aggregated scores of 26 individual physical risk drivers, and the same goes for the scores for transition risk which are the aggregated scores of 11 individual risk drivers.[13] This means that even though a sector or sub-sector is scored low risk at aggregated level, there could still be certain risk drivers which are rated medium/high in a sector and should be managed. For instance, although the aggregated scores for Transportation and Logistics sector is low risk for both physical risk and transition risk, we will still assess individual risk drivers scored medium/high risk at transaction level.

The following physical risk drivers are considered medium/high risk by more sectors than other drivers:

- storms, hurricanes, and typhoons (extreme weather);
- supply chain resource use and management (resource scarcity); and
- air pollution and carbon emission management (pollution and waste).

As for transition risk drivers, the following risk drivers are considered medium/high risk by more sectors than other drivers:

- environmental regulatory requirements changes/adoption (policy/regulation);
- environmental ING policy changes/adoption (policy/regulation); and
- reputational risk (market sentiment and demand).

Challenges

As mentioned, the heatmap assessment was primarily based on expert judgment. The key challenge to move from expert judgement-based assessment to a data-driven approach is two-fold: sourcing data and interpreting data. Since our clients are active in various sectors and geographical areas, we need to look into multiple data sources that often vary in scope, granularity, and quality, making it hard to compare or draw conclusions. We are exploring a way forward for sourcing data, such as developing a ESG data strategy for data collection and integration.

12 EAD is based on June 2022 data.

13 Each risk level has been assigned a score: Low-1; Medium-2; High -3. A sector or sub-sector is classified as Low, Medium, High based on the aggregated score of each risk level.
- **Low:** when less than half of the risk factors scored Medium
- **Medium:** when more than half of the risk factors scored Medium
- **High:** when all risk factors scored Medium or High

Please refer to our 2021 Climate Report for detailed information on the risk drivers used for the heatmaps.

Also, to understand the financial impact of C&E risks on our portfolio, in addition to sector-based assessment, we need to make assessment at client level and distinguish their risk levels. To achieve this, we need to know their readiness for the transition to a more sustainable and low-carbon economy and their capacity to adapt to adverse effects of climate change. However, this type of data and information is not always available. Even when they are available, it is not straightforward translating the insight into forward-looking financial impact given the uncertain climate futures.

Next steps

We plan to review the heatmap methodology periodically to ensure that our heatmaps stay relevant to the sector developments in our business and so that we can continuously improve the quality of our risk assessment with new data, techniques, and learning. Our priorities for refinement include a transition from expert judgement towards a data-driven approach, a reflection on medium and long-term (beyond five years and up to 30 years) climate and environmental risks and a deep dive into country-specific risks.

In addition to the Wholesale Banking and Business Banking sector heatmaps, we initiated our first heatmap assessment to understand the impact of C&E risk on sovereigns and their capacity to adapt to be resilient to C&E risk. We did so through a combination of expert judgement, desktop research, and external data sources. We intend to leverage the results by considering them as input for market risk appetite statement and stress testing.

Risk identification and assessment – Quantitative assessment of physical risk drivers

Introduction

In 2021 and 2022 we improved our understanding of the physical risk impact of climate events on our mortgage portfolio and underlying assets. For this assessment we collected over two million granular location data items from the Netherlands, Belgium, Luxembourg, Germany, Australia, Spain, Italy, Poland, and Romania and matched it with data of 19 individual climate hazard events provided by Royal HaskoningDHV, in partnership with Ambiental, a company of Royal HaskoningDHV ('Ambiental'). With the received climate data, we were able to cover 99% of our total residential mortgages book, representing €311 billion, in these countries. We carried out the portfolio assessment on data from September 2021; this assessment is still valid since neither our portfolio, nor the related climate risk has changed substantially since then.

Methodology and scope

Table 8 shows the individual climate hazards that we assessed. The climate hazards are grouped into four climate scores based on the aggregation of individual hazards into Geological, Hydrological, Meteorological, and Fire. Also, for the assessment we made use of the Summary Climate Risk Score recommended by Ambiental which is derived by taking the mean average of the four different aggregated scores of Geo, Hydro, Meteo and Fire (see table 8 below).

Table 8 Individual climate hazards assessed

Aggregated hazards	Individual Hazards assessed	Very low risk score description[14]	Very high-risk score description[14]
Geophysical (GEO)	Earthquake	The property will experience light damage during a relatively rare event.	Property is likely to suffer severe damage from relatively frequent events.
	Volcano	Property is at risk of low damage from very rare events	Property is at risk to suffer catastrophic damage from rare events.
	Tsunami	Property is at risk from extreme Tsunamis but unlikely to suffer catastrophic damage except from the rarest events	Property is likely to suffer catastrophic damage from frequent Tsunami events
Hydrological (HYDRO)	River Flood (defended)	Property is at risk from Fluvial flooding but unlikely to suffer high damage, except from the most extreme events	Property is likely to suffer high damage from frequent Fluvial events
	Surge Flood	Property is at risk from Surge flooding but unlikely to suffer high damage, except from the most extreme events	Property is likely to suffer high damage from frequent Surge events
	Flash Flood	Property is at risk from Pluvial flooding but unlikely to suffer high damage, except from the most extreme events	Property is likely to suffer high damage from frequent Pluvial events
	Sea Level Rise[15]	Property is likely to be subject to an increased risk of tidal inundation from extreme weather or very extreme tide events in the absence of future shoreline	Property is below sea level and likely to suffer annual flooding without future shoreline management.
	Precipitation Stress	The maximum daily rainfall is lower than 25 mm.	The maximum daily rainfall is higher than 100 mm.
Meteorological (METEO)	Tropical Cyclones	Property is at low risk from Cyclones and is unlikely to suffer moderate damage except from extremely rare events	Property is likely to suffer catastrophic damage from frequent events
	Extratropical Storms	Property is in a region that incidentally experiences some days of extratropical storms per year (<2 weeks)	Property is in a region that experiences extratropical storms seasonally for a major period every year (>2 months)
	Hail	The property is at risk of damage from extremely rare events (less than once every 3 years).	The property is at risk of damage from very frequent events (structurally multiple events per year).
	Tornado	Property is at risk of severe damage from extremely rare events	Property is likely to suffer catastrophic damage from relatively frequent events
	Lightning	Property is in a region that experiences lightning activity a few times per year (0 – 16 days).	Property is in a region that is exposed to major lightning activity throughout the year (64 – 80 days).
	Drought Stress	Property is in a region that incidentally experiences some weeks of drought stress per year (<2 months)	Property is in a region that is exposed to major period of drought stress throughout the year (9 – 12 months)
	Heat Stress	The property is located within a region that incidentally experiences occasional days of heat stress.	The property is located within a region that is exposed to major periods of heat stress throughout the year (2-12 months)
Fire	Wildfire	Property is at risk of severe damage from extremely rare wildfire events (once in 19 years)	Property is at risk of severe damage from wildfires that occur every one or two years.
	Fire Weather	Property is at very low risk, high fire weather rating for less than 15% of the year	Property is at very high risk, high fire weather rating for more than 70% of the year

14 Note that if the score is 0 the properties assessed are not to be considered at risk of the respective individual hazards. The 'very low risk' starts with a score of 1-20. And very high-risk score is 81-100.

15 Sea Level Rise has a different scoring than other hazard events – 0; 1-50; 51-99; 100.

Progress and key highlights

Based on the initial assessment of our mortgage portfolio we see the following key results:

- Assessing risk at present day at aggregated level (meaning all individual risk drivers together are captured into one overarching score: Summary Climate Risk score), ING's global mortgage portfolio is in the very low risk category (12/100) and <1% of our global mortgages outstandings score as high risk.
- The hazards categorised under 'Meteo' (see Figure 13 below) account for the highest risk scores, although still in the very low category. In Italy and Romania the hazards under 'Geo' transcends.
- Assessing the portfolio at an individual hazard level, around 5% of ING's mortgage book has at least one hazard with a very high score. We see this in Australia, Spain, Italy and Germany.
- Looking at future risks and assessing the Representative Concentration Pathway (RCP)[16] scenarios we see a continuously deteriorating trend in the short, medium and long term. Moving towards 2030, 2050 and 2100, the aggregated Summary Climate Risk score is expected to increase most for Italy, Romania, and Spain – although still to be considerd as a 'low risk' score.

Low risk scores do not mean there is no likelihood of the hazards to happen or to cause damage

It's important to note that a low risk score has a slightly different meaning for the 19 individual hazard scores. This is why the meaning of very low risk scores as well as the very high risk score per individual hazard is included in above table. For example for all Hydro hazards any property with a score of 1 or higher the property is at risk from the different types of flooding but with increasing likelihood of suffering damages. Starting with the low risk scores (1-20) that indicate unlikely to suffer high damage, except from the most extreme events to high risk (61-80) with property is likely to suffer high damages from moderate and rare events and low or moderate damage from frequent events. This means that even in low-risk areas we will see individual hazards occur but the low risk rating indicates that we are likely to see low damage from these events. Similar for drought and heat stress, properties with a very low and low score (1-40) do experience drought and heat stress but only for a short period per year (e.g. two months for drought and occasionally for heat) while properties with high and very high risk scores experience this during a large part of the year (drought for 9-12 months per year).

16 An RCP is a greenhouse gas concentration (not emissions) trajectory adopted by the Intergovernmental Panel on Climate Change (IPCC). The four pathways – originally RCP2.6, RCP4.5, RCP6, and RCP8.5 – describe different climate futures, all of which are considered possible depending on the volume of GHG emitted in the years to come. The RCPs are labelled after a possible range of radiative forcing values in the year 2100 (2.6, 4.5, 6, and 8.5 W/m^2, respectively).

Detailed view on physical climate risk on mortgage portfolio

To underpin the above key highlights, below are tables that show the outcomes per country and physical risk drivers on four aggregated levels: Geo, Fire, Hydro and Meteo.

Figure 12 Summary score and OS per country Source: Ambiental

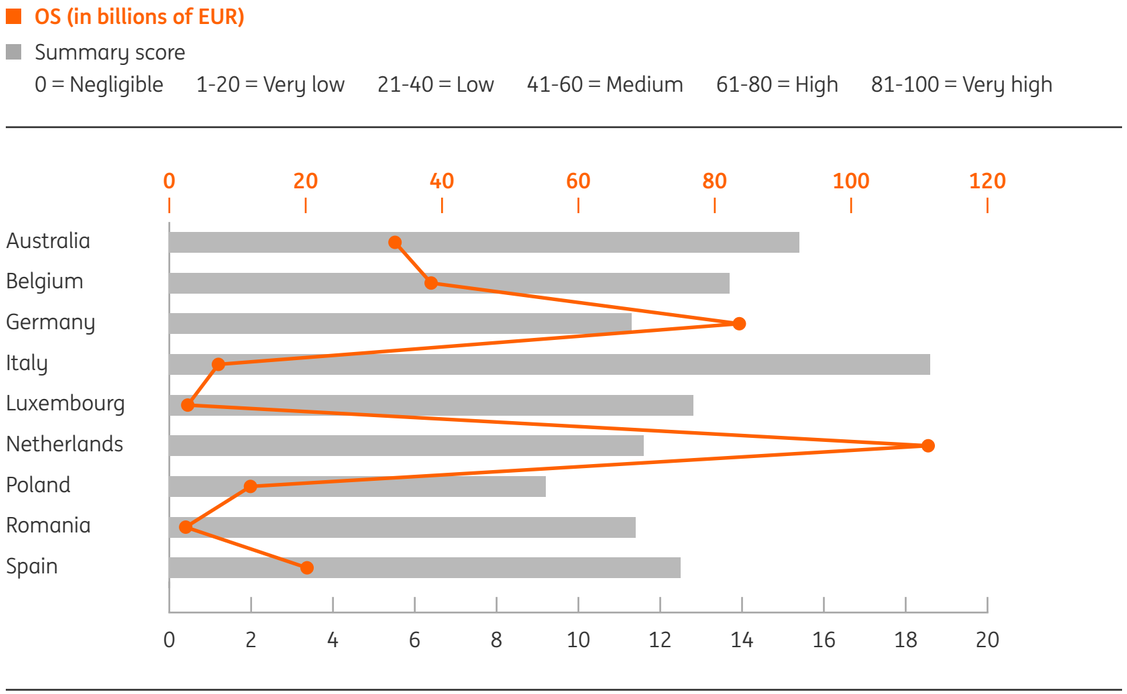
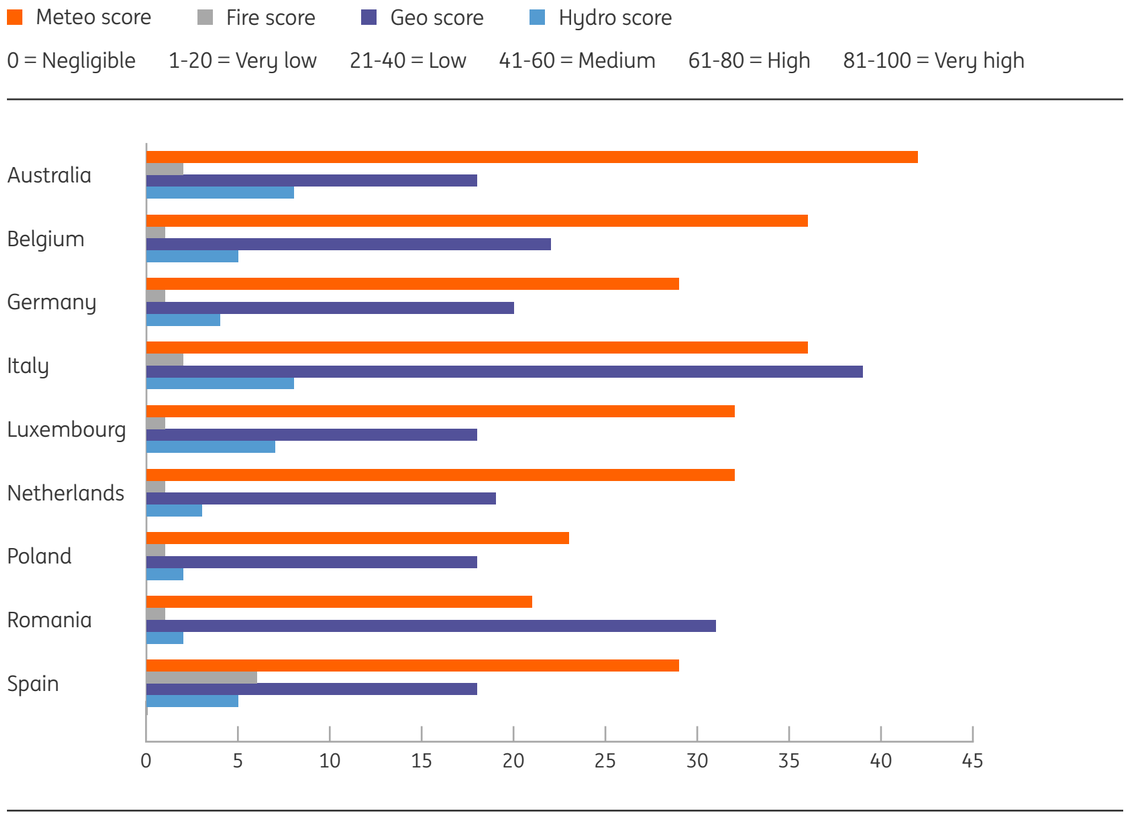


Figure 13 Aggregated hazard score per country Source: Ambiental



Comparing the four aggregated hazard risks, meteorological hazards account for the highest risk scores in all countries, although this risk still classified as low in all countries, except in Australia, where it is classified as medium risk. For Italy and Romania, the geophysical hazards represent the highest risk scores, although classified as low risk in both countries.

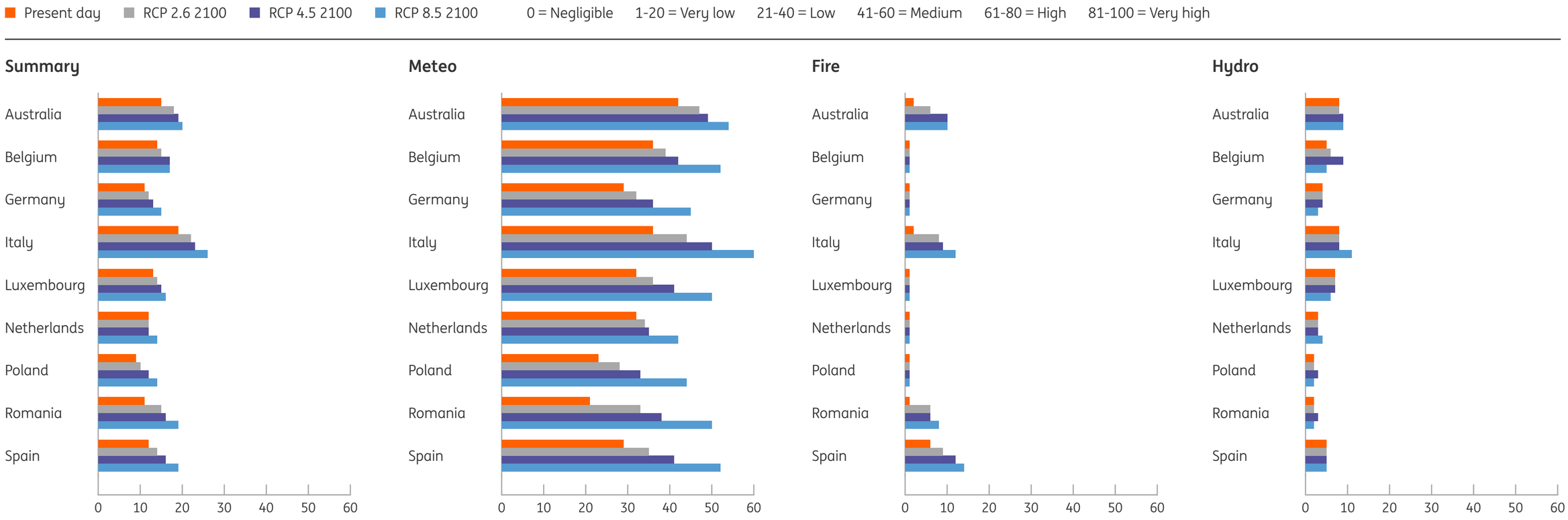
Figure 14 Aggregated hazards in % per country

Physical risk in future depending on climate scenarios

The above figures show the physical risks at present day. It is equally useful to look at how this will change over the coming years under different climate scenarios, known as RCP. This is especially relevant for mortgage lending as these assets will be on our book for a longer period. We have therefore assessed the risk categories Meteo, Fire and Hydro under different climate scenarios for the year 2100.

Figure 15 shows that by 2100, assuming our portfolio composition stays the same, risks will have increased the most for Italy, Romania, and Spain and we see the biggest increase in risk under the worst climate scenario (RCP 8.5). The largest risk increases are expected to be due to fire hazards, mainly in Australia, Italy and Spain. Applying the worst-case scenario (RCP 8.5) we see that current low and medium Meteo risks are expected to increase to a medium level for all countries.

Figure 15 Risk scores – summary and per hazard – for year 2100 and under different RCPs



Individual hazard scores

Looking at the scores for individual hazards, as opposed to average summary and aggregated scores, we see that around 5% of our mortgage book has at least one individual hazard that is rated high or very high. Stress from drought, hail and heat are the key hazards triggering a very high-risk score. The biggest impacts are in Australia, Spain and Italy. It is important to note that these risks may have very different impacts on our mortgage book. For example, hail might cause damage to a property but is unlikely to severely impact its value. A high-risk score for Hail means the frequency of the events will increase – it does not say anything about increased damage.

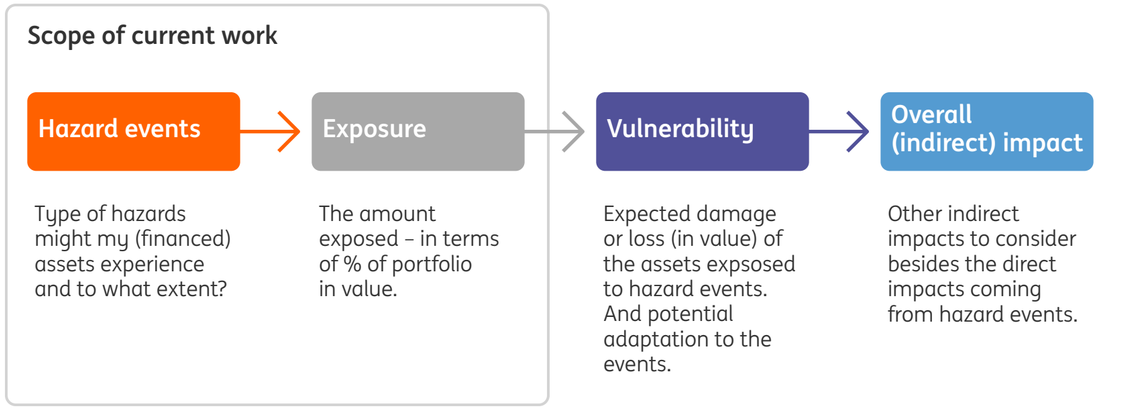
A higher risk score for drought and heat stress tells something about the duration of the stress during the year. A very high-risk score might mean it's there almost the entire year. It does not say anything about the severity of the drought or heat, nor does it specifically indicate the consequences in terms of damage to the property.

Challenges

Taking our current work to the next stages, as visualised in Figure 16, is challenging. Calculating the vulnerability and especially the indirect impacts is hard especially since hazards caused by climate change are expected to cause impacts we have not seen before.

To fully understand the financial impact of any physical risk driver, we need to understand the 'transmission channel' between the physical risk and the financial impact itself. For example, will the impact of flooding be that a property drops in market value, impacting the loss given default (LGD) of (parts of) our portfolio?

Figure 16 Scope of current work



And/or will the additional costs for preventive measures and/or damage impact our probability of default (PD) since they affect the financial position of our mortgage customers? And what might the impact be of indirect impacts and potential insurance gaps with negative consequences on the property's value? Getting the transmission channel right is complex and deserves more and better understanding by banks and supervisors alike before taking final decisions. We are confident that this first step in understanding and quantifying physical risk drivers contributes to that discussion and creates insights from which the market as a whole can benefit.

Another challenge is with translating our insights into consequences for our future individual mortgage customers. What hazard events and what timing do we use for strategic choices? For example, exclusion or differentiation in price and/or loan conditions. And if we would apply these, how can we safeguard a fair playing field for all homeowners and not penalise homeowners that happen to live in a house or in a region that is hit the most by future hazard events?

Next steps

We will use the outcome of our physical risk assessment as input for our CRAS for Mortgages as well as for our Retail lending strategy. Also, we will carry out a similar exercise with the immovable assets we finance for our business clients. Finally, in order to use the data on an ongoing basis, we need to create automated processes to be able to assess potential new mortgages. Alongside our own next steps to continuously improve, we will also actively share our learnings and outcomes in peer collaborations and working groups such as within the UNEP-FI.

Annex

TCFD recommendations table

The following table provides reference to ING's progress on implementing the 11 TCFD recommended disclosures covered as part of this report.

TCFD Recommended Disclosures			Section Reference	Sub-Section Reference	Page number(s)
Governance	a	Describe the board's oversight of climate-related risks and opportunities.	Governance	Governance of ESG Risks and Opportunities	14 – 15
			Governance	ESG-linked remuneration	16
	b	Describe management's role in assessing and managing climate-related risks and opportunities.	Governance	Governance of ESG Risks and Opportunities	14 – 16
			Governance	ESG-linked remuneration	16
Strategy	a	Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	Strategy	Managing climate and environmental risks	30 – 33
			Strategy	Finance and advise clients in line with a net-zero economy	24 – 30
			Strategy	Steer our portfolio towards net zero by 2050 or sooner	23 – 24
			Strategy	Reach net zero in our own operations	21 – 22
	b	Describe the impact of climate-related risks and opportunities on the organisation's business, strategy and financial planning.	Strategy	Managing climate and environmental risks	30 – 33
			Strategy	Finance and advise clients in line with a net-zero economy	24 – 30
			Strategy	Steer our portfolio towards net zero by 2050 or sooner	23 – 24
			Strategy	Reach net zero in our own operations	21 – 22
	c	Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a two-degree or lower scenario.	Risk Management	Our approach to managing climate risk	32 – 38
			Metrics and targets	Terra – steering our portfolio	42
Risk management	a	Describe the organisation's processes for identifying and assessing climate-related risks.	Risk Management	Summary per risk domain	39 – 40
	b	Describe the organisation's processes for managing climate-related risks.	Risk Management	Our approach to managing climate risk	37 – 38
	c	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	Risk Management	The ESR framework	41 – 43
Metrics and targets	a	Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	Metrics and targets	Own operations	45 – 47
			Metrics and targets	Terra – steering our portfolio	47 – 83
			Metrics and targets	Sustainable finance	83 – 85
			Metrics and targets	Climate and environmental risk	85 – 95
	b	Disclose scope 1, scope 2, and, if appropriate scope 3 GHG emissions, and the related risks.	Metrics and targets	Financed emissions	81 – 82
			Annex	Environmental programme	98
	c	Describe the targets used by the organisation to manage the climate-related risks and opportunities and performance against targets.	Metrics and targets	Own operations	45 – 47
			Metrics and targets	Terra – steering our portfolio	47 – 83
			Metrics and targets	Sustainable finance	83 – 85
			Metrics and targets	Climate and environmental risk	85 – 95

Environmental programme

A detailed data review of historical data and methodology has resulted in the below restatements. In this table we restate the last two years and our baseline year of 2014.

Table 9 Breakdown of electricity consumption and other energy consumption

Breakdown of electricity consumption						
	2021	2020	2014	2021	2020	2014
Coverage (% of employees)	99	99	92	99	99	92
			MWH x 1000			kilotonne CO_2e
Non-Renewable electricity	-	-	75	–	–	42
Renewable electricity	177	195	227	–	–	–
Total electricity	177	195	302	–	–	42

Breakdown of other energy consumption						
	2021	2020	2014	2021	2020	2014
Coverage (% of employees)	99	97	92	99	97	92
			GJ X 1000			kilotonne CO_2e
Natural gas	162	165	358	9	11	23
Fuel oil	5	4	15	0.4	0.3	2
District heating	117	110	81	8	8	7
Total other energy[1]	284	279	454	18	19	31

Table 10 Kilometres and carbon emissions through business travel[1]

Kilometres and carbon emissions through business travel						
	2021	2020	2014	2021	2020	2014
Coverage (% of employees)	97	99	90	97	99	90
			KM x 1 million			kilotonne CO_2e
Travel KMs[2]	57	71	168	7	9	23

Table 11 Carbon emissions

Carbon emissions			
	2021	2020	2014
Actuals coverage (% of employees)	97	97	91
			kilotonne CO_2e
Total actual carbon[3]	25	28	96
Total extrapolated carbon	26	29	105
Total actual carbon scope 1[4]	10	11	25
Total actual carbon scope 2[5]	8	8	49
Total actual carbon scope 3[6]	7	9	23

In 2022, following a refresh of our data platform, we conducted a detailed historical review of our carbon-related data. In doing so, we have (1) made corrections to datapoints that were incorrectly reported; (2) corrected our coverage statistics for extrapolation where those were incorrectly applied; and (3) improved our methodology by applying more granular emission factors for our usage of district heating. The data has been restated for all carbon-related tables, displaying the last two reporting years as well as our baseline year, 2014. Since 2014, our reporting was cumulatively under-reported by 5,900 tonnes of CO_2e.

1 The Total other energy is the sum of natural gas, fuel oil, and district heating. The total can deviate from the sum of all categories due to rounding-up to gigajoules.
2 Business travel comprises travel by air and by road for business purpose only.
3 The total actual carbon is the sum of scope 1, 2 and 3 actual emissions. The total can deviate from the sum of all categories due to rounding-up to kilotonnes. Our calculation methodology and scope are defined in ING's non-financial data reporting protocol.
4 Scope 1 comprises emissions from our use of natural gas and fuel oil.
5 Scope 2 comprises emissions from our use of non-renewable electricity and district heating.
6 Scope 3 comprises emissions from our business travel by air and car.

List of abbreviations

2DII: 2 Degrees Investing Initiative
AD: Alignment Delta
AER: Annual Efficiency Ratio
B2DS: IEA (ETP) Beyond 2°C Scenario
BPIE: Buildings Performance Institute Europe
C&E: Climate-related and environmental risks
CAPEX: Capital Expenditures
CCAF: Center for Climate-Aligned Finance
CCC: Climate Change Committee
CEG: Climate Expert Group
CEO: Chief executive officer
CFP: Corporate Facility Partner
COP: Conference of the Parties
CRAS: Credit Risk Appetite Statement
CRO: Chief risk officer
CRREM: Carbon Risk Real Estate Monitor
CSIRO: Commonwealth Scientific and Industrial Research Organisation
CSRD: Corporate Sustainability Reporting Directive
DGBC: Dutch Green Building Council
EAD: Exposure at Default
EAF: Electric Arc Furnace
EBA: European Banking Authority
EBIT: Earnings Before Interest and Taxes
EC: European Commission
ECB: European Central Bank
EMEA: Europe, the Middle East and Africa
ENCORE: Exploring Natural Capital Opportunities, Risks and Exposure
EP: Environmental Programme
EPC: Energy Performance Certificate
ESG: Environmental, Social and Governance
ESR: Environmental and Social Risks
EU: European Union
EU ETS: European Union Emissions Trading System
EUT: European Union Taxonomy
(B)EV: (Battery) Electric Vehicle
FO: Front Office
FSB: Financial Stability Board
GCC-TA: Global Credit Committee – Transaction Approval
GCTP: Global Credit and Trading Policy Committee
GHG: Greenhouse gases
GOO: Guarantee of Origin
ICAAP: Internal Capital Adequacy Assessment Process
ICE: Internal Combustion Engine
IEA: International Energy Agency
IRRBB: Interest Rate Risk in the Banking Book
ISF: Institute for Sustainable Futures
KPI: Key Performance Indicator
IMO: International Maritime Organisation
IPBES: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
LDV: Light Duty Vehicle
LGD: Loss Given Default
M&A: Mergers and acquisitions
MBB: Management Board Banking
NAICS: North American Industry Classification System
NACE: Nomenclature of Economic Activities
NVB: Dutch Banking Association
NZBA: Net-Zero Banking Alliance
PACTA: Paris Agreement Capital Transition Assessment
PCAF: Partnership for Carbon Accounting Financials
PD: Probability of Default
PET: Polyethylene terephthalate
PP: Poseidon Principles
RAS: Risk Appetite Statement
RB: Retail Banking
RCF: Revolving Credit Facility
RCP: Representative Concentration Pathway
REC: Renewable Energy Certificate
REF: Real Estate Finance
REIT: Real Estate Investment Trust
RMI: Rocky Mountain Institute
RPK: Revenue Passenger Kilometre
RVO: Netherlands Enterprise Agency
PAS: Portfolio Alignment Score
SCO: Senior credit officer
SDG: Sustainable Development Goal
SIL: Sustainability Improvement Loan
SME: Small and Medium-sized Enterprises
SSM: Single Supervisory Mechanism
SSP: Sustainable STEEL Principles
SSRA: Sector, Strategy and Risk Appetite
TCFD: Task Force on Climate-related Financial Disclosures
TNFD: Taskforce Nature-related Financial Disclosures
UN: United Nations
UNEP-FI: United Nations Environment Programme Finance Initiative
WB: Wholesale Banking
ZPD: ZonnepanelenDelen

Important legal information

Nothing in this document expressed or implied, is intended to or shall create or grant any right of any cause of action to, by or for any person (other than ING Groep N.V.)

All figures in this document are unaudited. Small differences are possible in the tables due to rounding.

Certain of the statements contained herein are not historical facts, including, without limitation, certain statements made of future expectations and other forward-looking statements that are based on management's current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance, or events to differ materially from those expressed or implied in such statements. Actual results, performance or events may differ materially from those in such statements due to several factors, including, without limitation:

(1) changes in general economic conditions and customer behaviour, in particular economic conditions in ING's core markets, including changes affecting currency exchange rates and the regional and global economic impact of the invasion of Russia into Ukraine and related international response measures
(2) the effects of the Covid-19 pandemic and related response measures, including lockdowns and travel restrictions, on economic conditions in countries in which ING operates, on ING's business and operations and on ING's employees, customers, and counterparties
(3) changes affecting interest rate levels
(4) any default of a major market participant and related market disruption
(5) changes in performance of financial markets, including in Europe and developing markets
(6) political instability and fiscal uncertainty in Europe and the United States
(7) discontinuation of or changes in 'benchmark' indices
(8) inflation and deflation in our principal markets
(9) changes in conditions in the credit and capital markets generally, including changes in borrower and counterparty creditworthiness
(10) failures of banks falling under the scope of state compensation schemes
(11) non-compliance with or changes in laws and regulations, including those concerning financial services, financial economic crimes and tax laws, and the interpretation and application thereof
(12) geopolitical risks, political instabilities and policies and actions of governmental and regulatory authorities
(13) legal and regulatory risks in certain countries with less developed legal and regulatory frameworks
(14) prudential supervision and regulations, including in relation to stress tests and regulatory restrictions on dividends and distributions, (also among members of the group)
(15) regulatory consequences of the United Kingdom's withdrawal from the European Union, including authorisations and equivalence decisions
(16) ING's ability to meet minimum capital and other prudential regulatory requirements
(17) changes in regulation of US commodities and derivatives businesses of ING and its customers
(18) application of bank recovery and resolution regimes, including write-down and conversion powers in relation to our securities
(19) outcome of current and future litigation, enforcement proceedings, investigations, or other regulatory actions, including claims by customers who feel mislead and other conduct issues
(20) changes in tax laws and regulations and risks of non-compliance or investigation in connection with tax laws, including FATCA
(21) operational risks, such as system disruptions or failures, breaches of security, cyber-attacks, human error, changes in operational practices or inadequate controls including in respect of third parties with which we do business
(22) risks and challenges related to cybercrime including the effects of cyber-attacks and changes in legislation and regulation related to cybersecurity and data privacy (23) changes in general competitive factors, including ability to increase or maintain market share
(24) the inability to protect our intellectual property and infringement claims by third parties
(25) inability of counterparties to meet financial obligations or ability to enforce rights against such counterparties
(26) changes in credit ratings
(27) business, operational, regulatory, reputation, transition and other risks and challenges in connection with climate change and ESG-related matters
(28) inability to attract and retain key personnel
(29) future liabilities under defined benefit retirement plans
(30) failure to manage business risks, including in connection with use of models, use of derivatives, or maintaining appropriate policies and guidelines
(31) changes in capital and credit markets, including interbank funding, as well as customer deposits, which provide the liquidity and capital required to fund our operations, and
(32) the other risks and uncertainties detailed in the most recent annual report of ING Groep N.V. (including the Risk Factors contained therein) and ING's more recent disclosures, including press releases, which are available on www.ING.com.

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