
ING
2021
Climate Report
Our integrated approach to climate action
do your thing

Contents

Foreword

We are at a crossroads. While the potentially devastating effects of climate change have long been signalled by the broader scientific community, this existential issue is now reaching critical mass in our collective consciousness. Fires, floods, heatwaves and polar ice melts – the evidence is all around us, and it's stacking up.

Steven van Rijswijk, CEO of ING

This increased global awareness is triggering more urgent climate action, yet for the past 20 months the world has been dealing with a crisis of a different kind – the coronavirus pandemic. The pandemic has caused us all to re-evaluate what's really important, focusing extra attention on environmental and social issues. Now, with mass vaccination programmes providing the promise of a route out of the pandemic-related crisis, the world has a unique opportunity: as we work on recovering and rebuilding, we can make fundamental and systemic changes that will build back an even better world.

ING's commitment

This opportunity is being seized by both the private sector, for example with the Net-Zero Banking Alliance which ING has committed to, and the public sector, for example with the European Commission's Green Deal. As ING, we want to carry this momentum forward, building on partnerships with peers and across industries, supporting our customers and society at large to successfully make the necessary transition. We want to help finance a social and green recovery that limits global warming, and at the same time creates jobs, speeds up sustainable growth and builds more resilient societies.

ING's commitment to sustainability started more than 20 years ago. We have a key role in financing the real economy, and as the economy transitions to a low-carbon future, we are committed to financing that transition. Our Terra approach demonstrates our commitment to be a positive force in the fight against climate change. Our commitment to achieve net zero greenhouse gas emissions by 2050 or sooner will be integrated in our Terra approach, meaning we'll now evolve the approach to steer our loan book towards limiting the rise in global temperatures to a maximum

of 1.5 degrees Celsius, rather than the previous target of well below 2 degrees Celsius. We see this as an opportunity to use our experience and knowledge as we help clients with advice and financing to facilitate their transition to a net zero world. The pathway to net zero also brings many opportunities in financing new energy technologies, such as hydrogen, carbon capture and energy storage.

We're also increasingly managing the risks that climate change poses to our clients and to ING. As the climate crisis worsens, extreme weather patterns and the associated impacts on society create a range of physical and transition risks that we need to address. ING is working to embed the management of these climate risks into our overall risk management approach and our business practices.

My focus as CEO

As a result of the commitments we've made and the actions we've taken, along with the transparent way in which we report on them, ING is recognised as a sustainability and climate action leader in the financial services sector, by external agencies and peers alike. One of my main focus areas as CEO is to make sure ING continues to build on this leadership position. So how do we take our commitments and our actions to the next level?

I believe it's about **integration**. Taking an integrated view on what sustainability means, from reducing our own carbon footprint, to the impact of climate change on human rights, to integrating our approach to biodiversity into our climate strategy. We're already working on this, but we can do more by further integrating sustainability into our retail and wholesale customer propositions, and further integrating climate risk into our risk management. And integrating our reporting, as this report does by transparently showing how we are dealing with 'both sides of the coin' – managing the risks resulting from climate change, and playing our part to finance positive change and mitigate the effects, thereby supporting our clients to transition, and adapt to a changing world.

This report highlights what ING is doing to take on the existential threat of climate change. But none of us can do this alone. For true change to happen it requires a concerted collaborative and consensus-based effort across all sections of society. Ultimately, it's companies in the real economy that will bring about change – by changing their business models, their use of resources, and their offerings (and incentives) to consumers. Banks are there to finance this change and help companies create long-term value. And governments can – and should – direct and guide this change. It takes three to tango. By increasing the tempo of that dance now, we still have time to safeguard the future of our planet and the future generations who will inherit it.

Executive summary

Combatting climate change requires greater ambitions and faster action. That's why ING has joined the Race to Zero, where we now aim to align our portfolio to achieve net zero emissions by 2050 or sooner. As we work to achieve this and address the risks of climate change, we share our progress in our first integrated climate report.

Integrated climate approach

Our integrated climate approach begins with our convictions about the climate crisis, where we recognise the growing threat to the environment and the potential impacts for people around the world. We also recognise that climate action is a business and economic imperative, and that there are risks and opportunities involved in the energy transition.

An integrated approach means taking action in different but connected ways. Because we can impact climate change, we steer our financing to support companies to create positive change and aim to prevent further negative impacts. And because climate change can affect us, we also need to manage climate risks. The report also highlights how we are financing and advising our clients on their transition strategies, which is one of the core areas where climate alignment and climate risk management come together.

Other areas of work can both contribute to and benefit from our success in fighting climate change. This includes human rights, which calls for a just and inclusive transition; biodiversity, where we aim for collective environmental protections and restorations; and a circular economy, which can provide inspiration for economic models to strengthen the transition. We have initiatives for each of these topics and continue to strengthen the connection with our climate action agenda.

Our approach also references the enablers that will help us succeed faster as we integrate climate action further into our business. Critically this includes improving our climate data analytics, and increasing the speed of innovation in sustainable products and services.

Our progress

We also share our progress and challenges in achieving our climate action priorities. We start by sharing how we are reducing the footprint of our own operations. In 2020, we reached 100% renewable electricity use for the first time in our own buildings, and continued to see reductions in our operational emissions.

Steering our portfolio

We share our progress in using our Terra approach to measure and steer our lending portfolio in line with our climate ambitions. Our Climate Alignment Dashboard shows that 5 of the 9 sectors in scope are on track with our existing alignment pathways. Another 3 sectors are within 5% of their alignment pathway, where we consider these sectors can improve their performance within a short time-frame.

Unfortunately, aviation comes out well above the pathway due to the extraordinary impact that the coronavirus had on the sector in 2020. While the coronavirus pandemic led to a significant reduction in absolute aviation emissions (estimated at 47%[1]), it has had a devastating impact on relative efficiency owing to the global fall in load factors, which has affected how our results appear this year. Results are expected to trend back towards the decarbonisation pathway as the sector recovers.

We made good progress on our ambition to reduce our exposure to fossil fuels and improved the CO_2 intensity of our lending in the power sector. In addition, our exposure to thermal coal mining has decreased by more than 90% from €316 million in 2017 to €30 million at year-end 2020. This year we also included an energy financing mix indicator for the first time. This provides an overview of combined primary and secondary energy production, which, together with the portfolio financing trend indicator, is used for overall energy sector steering.

As we process our new commitment to net zero through our Terra approach, energy is also the first sector to start updating its targets. In this context, we brought our upstream oil and gas target forward, setting a short-term absolute reduction target of -12% by 2025 for our absolute financing trend compared to 2019, aligned with the NZE2050 scenario. Further, we will update all the other sector scenarios in line with the NZBA guidelines and timelines. For now, progress in other sectors is still shown against the pathways that were applied during 2020.

The financial services sector would benefit from greater standardisation of climate methodologies per sector. We continue to affirm our call for global viable standards for banks to measure the climate alignment of their loan books on one hand and climate risk on the other.

We continue to collaborate with others to develop roadmaps and methodologies, including for hard to abate sectors. As an example we've teamed up with the Rocky Mountain Institute, and peer banks in the Climate Aligned Finance Working Group under the Net Zero Steel Initiative. Here we're leading efforts to create a credible, and widely acceptable decarbonisation roadmap for the sector. This follows our continued leadership in the Poseidon Principles partnership in the shipping sector.

Advising and financing our clients

We also made progress advising and financing our clients towards a net zero future. In 2020, ING closed 139 sustainable finance transactions, and we've continued to see this grow in 2021, with 133 transactions closed in 1H2021 alone. In the Bloomberg league tables[2] ING ranks fourth for *Green, Social and Sustainability EUR Bond Issuance* with more than €3.8bn in bonds issued, and sixth for *Green and Sustainability-linked Loans* with more than €7.5bn in syndicated loans.

An example of this financing was with Anheuser-Busch InBev, the world's largest brewer, where ING acted as joint sustainability coordinator in the largest sustainability-linked revolving credit facility ever issued at $10.1 bn. In another example, ING was lead lender and mandated lead arranger in the $1.6 bn non-recourse debt financing

1 Estimate based on analysis of data provided by Cirium.
2 As of 1 July 2021.

of Northvolt Ett AB, Europe's first homegrown 'gigafactory'[3] in Sweden, which will use hydro-generated power and maximise recycled content of the batteries.

Our clients see sustainability as a value driver, with the clear opportunity to differentiate as a front runner in the transition and be more resilient in the future. At the same time, regulatory demands on climate risk management as well as climate action are increasing, with the EU Green Deal and the related EU Taxonomy Regulation as primary examples. By combining our deep sector knowledge and financial expertise, we continue to offer an integrated advisory solution helping our clients on their transition journey.

Managing climate and environmental risks

We've also made progress in our approach to managing climate risks. We're embedding these risks in our risk management approach by assessing and starting to quantify the risks, and integrating our approach across our sector strategies and risk policies. We completed our climate & environmental risk heatmaps across our Wholesale Banking sectors and we conducted our first pilot assessments towards quantifying climate risks across energy, transport & logistics, and metals & mining (in partnership with management consultancy Baringa). Our energy and transport & logistics businesses were selected as pilots to develop their climate risk appetite frameworks and share their progress in the report.

Next steps

As we look ahead to next year, we expect to see more governments, and companies, taking concrete action towards reaching net zero by 2050. Ultimately, it's the companies in the real economy that bring about change. Banks such as ING finance change, and work with our clients to innovate and implement new forms of financing. And governments can – and should – direct and guide this change. Each party needs to play its part for us to succeed together in addressing the world's biggest sustainability challenges. Take for instance residential housing, where without firm regulation to encourage home-owners towards sustainable renovations, we predict that customer demand will not deliver the required change in the next few years.

Looking forward we plan to further mainstream our commitment to net zero across our climate action priorities and targets. This will be challenging, as it demands strong coordination between our various initiatives and further integration within the business, and ultimately rewarding, as we continue to work alongside our clients to create real impact.

3 More information on page 57.

Snapshot: Climate Action

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sectors are on track with climate alignment pathways, another 3 are close to the pathway.

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

Renewables account for

64%

of our power generation financing at year-end 2020. This includes wind, solar, water and geothermal power.

Began using

100%

renewable electricity in our own buildings in 2020, and reduced carbon emissions by 75% since 2014.

Set new target to reduce our funding to upstream oil & gas by

12%

by 2025 from 2019, in line with the IEA net-zero 2050 scenario.

Lending to thermal coal mining has reduced more than

90%

to €30mln at year-end 2020 from €316mln in 2017.

Climate risk heatmaps completed for over

83%

of assets in Wholesale Banking.

In 2020, ING closed

139

sustainable finance transactions, including supporting the largest ever sustainability-linked RCF for AB Inbev.

Our reporting scope for mortgages reached

70%

from 50% by including Poland and Belgium.

Our integrated climate approach

Our integrated climate approach

Steering towards net zero by 2050 or sooner while simultaneously managing climate risks requires an integrated approach that allows us to take action in different but connected ways. Our integrated climate approach shows how we plan to meet this challenge, bringing together all of the elements driving our climate action.

Introduction

Making climate risk part of a financial institution's core strategic objectives does not automatically mean a bank is contributing to financing the transition to a net-zero world or helping to avoid impacts to come. Inversely, aligning a portfolio with climate transition pathways does not mean that all financial climate-related risks are being managed properly. Both elements require attention and action, in the short- and longer-term. Therefore in our integrated climate approach we lay out our objectives under both of these priorities – climate risk and climate alignment – and demonstrate how they work together and overlap. Such overlaps occur for example in our evolving data approach, in how we steer our portfolio, and particularly how we advise and finance clients in their transition.

"ING is proud of what we have achieved so far with our Terra approach and sustainable financing of clients in their transition. As we integrate sustainability as a key strategic priority across the bank, now is the time to really accelerate our impact, to ensure all our clients and retail customers are empowered to stay a step ahead."

– Anne-Sophie Castelnau, global head of Sustainability

Our ambition

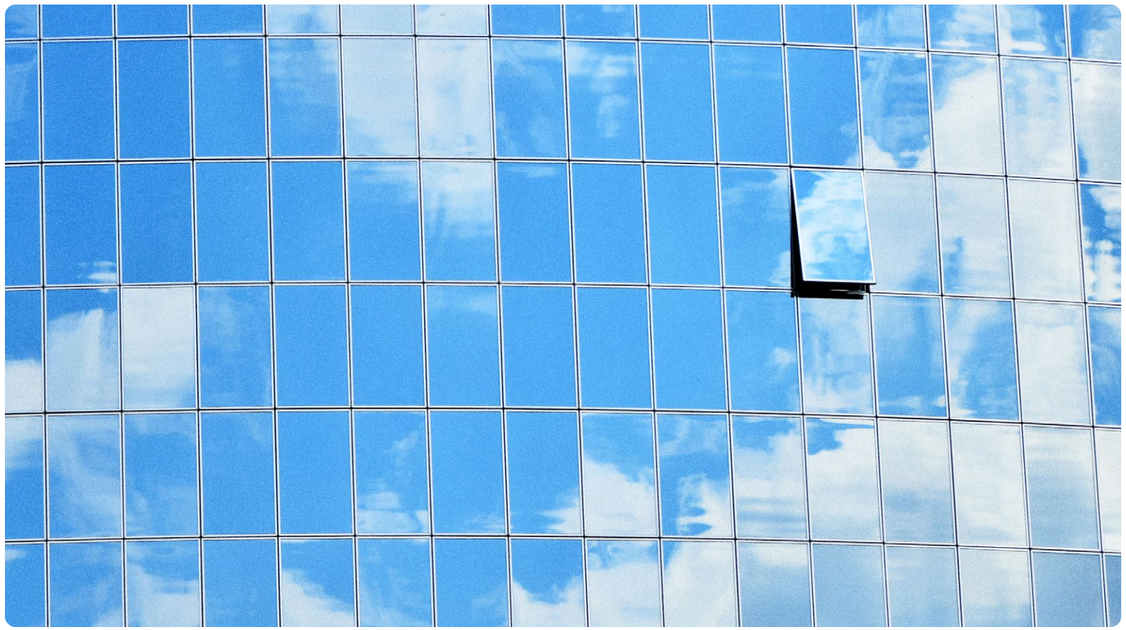
Climate science has continued to evolve and it has become increasingly clear that a more ambitious course of action is necessary. Recently, we increased our ambition to align our lending portfolio with a net zero future by 2050 or sooner. This means we'll now evolve our Terra approach to steer our loan book towards keeping the rise in global temperatures to a maximum of 1.5 °C, rather than well below 2 °C.

In increasing our ambition, we joined the Net Zero Banking Alliance (NZBA), and we look forward to working jointly on the transition. The NZBA also covers investment portfolios, and is likely to include capital portfolios in the coming years. While ING currently scopes our alignment targets based on our lending portfolio, we look forward to further developing our approach in future years.

The road to net zero brings many opportunities – such as the creation of new jobs and the financing of new energy technology areas, such as hydrogen, carbon capture and energy storage. ING continues to be a leader in financing this change with our innovative sustainable finance solutions. We see this as an opportunity to use our experience and knowledge to support clients with their transition to a net zero world.

We see that our ambition to reach net zero by 2050 goes hand-in-hand with our climate risk goals to become a more climate resilient bank, as supporting our clients and customers in their transition will also improve our exposure to climate risks.

We know that actions speak louder than words, which is why along with our commitments, we also present our action plans and where we are in achieving those. We aim to develop our plans as new climate scenarios and expectations emerge. At the same time, we recognise the role that regulators and governments must play to support and facilitate the road to a net zero emission world. The EU has enshrined its net zero targets into law, with new sweeping legislation already proposed to cut emissions by 55% by 2030 ('Fit for 55'), and we look forward to seeing ambitious national policies to align with this goal.



Our climate convictions

The following convictions underpin our approach to climate change.

Human-influenced climate change is a major threat to the environment

The 6th Assessment Report by the Inter-Governmental Panel on Climate Change (IPCC)[4] further underscored the high degree of certainty that human-activity is having a profound impact on the climate. From sea level rise, to melting glaciers, to heatwaves, droughts and flooding, the report demonstrated in detail the impacts of climate change. Such impacts on natural carbon sinks and ecosystems can also have major impacts on biodiversity[5]. Concerted global action is needed, fast, to prevent further environmental degradation.

Climate change can have implications for human rights and wellbeing

Climate change is already upending people's lives across the global, through for example, extreme weather events, such as droughts and cyclones that continue to increase in number and damage. We believe that climate change consequences can also impact human rights, potentially impacting health, food, water, sanitation, a healthy environment and more. Human rights are also considered in the context of the transition to net zero which can impact workers, consumers, and communities.

Climate action is also a business and economic imperative and opportunity

There is an estimated opportunity to add trillions[6] to the global economy if an orderly transition to net zero is achieved. Seeing the transition as an opportunity and imperative to finance and build the economy of tomorrow is key to avoiding potential disruption and maximising shared prosperity.

A major energy transition is required to reach net zero

A global energy transition is required towards lower-emitting energy sources, and large improvements are needed in the energy efficiency of industries, buildings and homes, vehicles and other energy consuming areas. This will require critical investments in technology across all industries so that we can go beyond the impact that existing technologies can bring. Consumption and waste must also decrease, which requires greater changes to consumption behaviour and economic models of resource circularity.

An inclusive and proactive approach is needed to change the real economy

Banks have a proactive role to play – to finance and advise our clients, to act and lend responsibly, and to use our voice to advocate for positive change. We also need to understand the financial implications of the radical changes needed and thereby support the broader economic shift. We believe we can make the most impact by engaging with our clients and changing sectors from the inside out. While we engage with and encourage clients in their transition, we acknowledge that they are ultimately the leaders of their own change.

4 IPCC, 2021: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J. B. R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press. Available: https://www.ipcc.ch/assessment-report/ar6/

5 World Economic Forum (2021, January 19). The Global Risks Report 2021 https://www.weforum.org/reports/the-global-risks-report-2021

6 https://www.forbes.com/sites/davidcarlin/2021/06/02/the-ieas-net-zero-climate-pathway-is-a-100-trillion-investment-opportunity/

Our climate action objectives

ING has identified a number of strategic priorities comprising our integrated approach to climate action.

1. Reach net zero in our own operations

We believe in leading by example, therefore our climate action starts by managing our own environmental footprint through our operations and suppliers. We monitor and manage our environmental impact closely, investing in operational efficiency solutions and sourcing 100% renewable energy for the buildings we have management control over.

2. Steer our portfolio towards net zero by 2050 or sooner

As a bank, we make the most positive impact on climate action through our financing, via the money we loan to companies and customers. We focus on the sectors in our loan book that are responsible for most greenhouse gas emissions, and measure whether our lending in each sector is aligning with our climate ambitions. We call this the Terra approach.

3. Finance and advise clients in line with a net zero economy

To support our clients in their climate transition we focus on accelerating the green economy, financing the transition, and pioneering financing for new technologies and business models. Traditionally such financing has focused more on our Wholesale Banking clients, but we are increasingly offering such solutions to our Mid-Corporate, SME, and retail customers.

4. Manage climate and environmental risks

We're progressively integrating the risks associated with climate change as an integral part of our risk management framework. Our approach continues to develop as methodologies advance and regulatory guidance and requirements evolve. Next to the focus on the impact of climate change on financial risks, we're increasingly focused on safeguarding biodiversity. We also aim to help our clients protect their business from climate risks by advising them and financing their transitions.

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

Enablers to our climate approach

We have identified several enablers to accelerate our progress.

Improved climate data analytics & operational integration

Building a strong data analytics operation is critical to the success of our climate approach. From the tools we use to measure alignment of sectors and clients, to how we assess and steer on risk – each part of the strategy requires advanced data analytics. Just as critical as how we steer on that data from organisation and sector perspectives, is how we're able to integrate it into our front-office systems so we can offer insights to our clients. A core focus is also on how we work with external data, acknowledging that we are often dependent on third parties for data. We aim to contribute to an ecosystem in which data availability and comparability are always increasing.

Faster innovation on sustainable products & services

ING has a history of launching innovative sustainability-financing products to help individuals and companies to improve their carbon footprint. From the first sustainability-linked loan, to the first sustainable derivatives product, ING has always been at the forefront – working with our clients to understand their sustainability strategies and looking for ways to finance and advise on these. The context in which our customers operate is rapidly changing, as they see increasingly visible impacts of climate change, growing public sentiment and expectation of change, and growing and more stringent regulatory requirements. To help our clients stay a step ahead, we intend to increase our pace of innovation to develop new products and services. This applies to our Retail and Wholesale Businesses.

Upskilling & empowering our organisation on ESG

As climate action becomes more integrated into our strategy, we see the need to continue building our people's skills and knowledge. This is critical as we further integrate our climate risk approach, and as we grow our product and service offerings, particularly in the Retail business. We run campaigns to inform colleagues about our climate ambitions and activities, and deliver training programmes that support colleagues to build and deliver new sustainability solutions in our business and to our clients. We aim for an organisation that is inspired and intrinsically motivated to create impact.

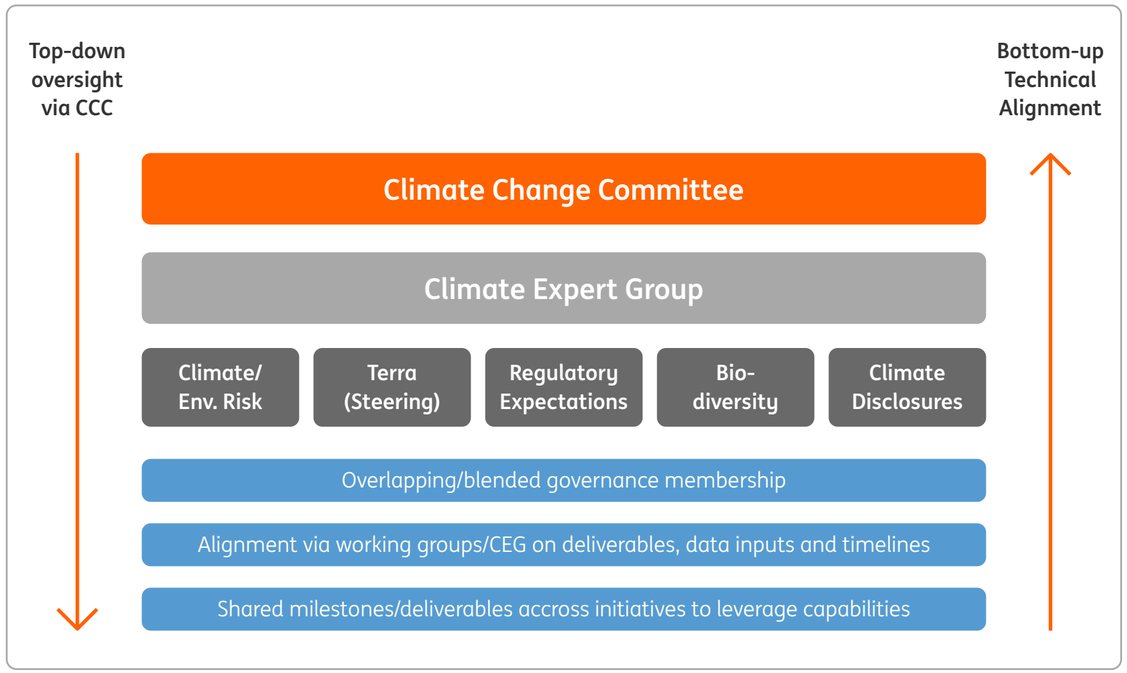
Effective governance & performance culture

Our climate governance model reflects an integrated governance structure that allows for the management of the separate priorities as well as the overlapping areas. It also takes into account the need to manage contributions to internal and external initiatives. Our governance structure helps to steer on both the opportunities and financial risks stemming from climate change in our business strategies and risk appetite.

The structure is led by our Climate Change Committee (CCC), which is co-chaired by ING's chief risk officer (CRO), who is also a member of the Executive Board, and co-chaired by the board member responsible for Wholesale Banking, a member of the Management Board Banking. It is further comprised of a number of board members, including the chief financial officer (CFO), global head of Retail, head of Market Leaders, and senior managers from the Wholesale and Retail businesses, including our global head of Sustainability and global head of Sustainable Finance. In 2021 the mandate of the CCC was expanded to include oversight of our approach to biodiversity.

The CCC is supported by a range of structures, including the Climate Expert Group (CEG) to provide sufficient top-down oversight and bottom-up technical alignment to leverage capabilities, identify conflicts and issue corrective actions for optimal output. The CEG comprises experts from across the business who are leading and advising on key climate initiatives. In turn the CEG is supported by project groups on climate & environmental risk, Terra and steering, regulatory expectations, biodiversity, our own operations, and climate disclosures.

Figure 1 Climate governance structure



Oversight of ING's sustainability ambitions, including our integrated climate approach, is embedded at the Executive Board level. Our Executive Board's targets for sustainability are described in the remuneration report in ING Group's 2020 Annual Report beginning on page 232. These targets are cascaded accordingly through the governance and departmental structures at ING to ensure we remain on track to meet our sustainability ambitions.

Collaborating for joint climate impact

No one sector, much less one bank, has the ability to solve the climate crisis. Therefore, when it comes to fighting the climate crisis, we seek to increase our impact through engagement, partnerships and coalition-building. This approach leads us to engage not only with clients, but also with peer financial institutions, governments and policy makers, and industry bodies and experts.

For several years ING has worked with stakeholders to build a collective approach to measuring and setting ambitions for steering our lending. This began with a pilot of 17 banks using the Paris Agreement Capital Transition Assessment (PACTA) approach, which was largely modelled on INGs Terra approach developed with 2DII. Our engagement later grew into leading collective commitments – first with the Katowice Commitment in 2018, which then became the basis for the UNEP FI Collective Commitment to Climate Change in 2019. Most recently, ING has helped shape the Net-Zero Banking Alliance and the supporting Guidelines for Target-Setting. We were also a founding signatory of the UNEP FI Principles for Responsible Banking (PRB), which have now been signed by more than 240 signatories representing $60 trillion in assets.

On climate risk, we've continued our engagement with peers in the UNEP FI working groups, moving from our participation in the Task Force on Climate-related Financial Disclosures (TCFD) Banking Pilot for Phase 2 towards Phase 3 where we are working collectively on the approach to sector-based climate risk mapping, climate stress testing, and disclosure best practices. We're also an active member of the Energy Efficiency Financial Institutions Group (EEFIG) working on risk assessment, and a member of the EC working group on biodiversity.

We see our stakeholder engagement moving into a new phase, where our collaboration with clients and sector stakeholders takes even greater importance. Across our sector and sustainable finance teams, we continue to work with our clients, leading to innovative financing solutions. Collaborations with organisations such as 2DII, and the Rocky Mountain Institute will continue to drive new scenarios and approaches that we and others can apply.

We also see a growing role for ING to contribute to the consultations for various sustainability-related regulatory initiatives. From the EU Taxonomy, to EBA Pillar III Disclosures, and from ECB guidance on climate related risks, to the EC's Renewed Sustainable Finance Strategy (RSFS) – all of these impact ING and our clients.

Contributing to the world around us

Achieving a net zero world and limiting the worst impacts of climate change means society needs to make simultaneous progress on a number of fronts. Our view on these challenges is largely informed by reports such as the International Energy Agency's May 2021 report on Net Zero by 2050[7]. Here we share how ING contributes to these challenges and opportunities in a number of ways.

1. Energy Transition

A huge decline in the use of fossil fuels is required while recognising the role of gas as a 'bridging' fuel for the gap between energy demand and renewables supply. Electricity should play a greater role in the global energy system, requiring a transformation of power systems. A 'just transition' should balance different capabilities and impacts within the global economy. We contribute to this challenge in a number of ways:

- We reached 100% renewable electricity in our own buildings in 2020. We continue to reduce our use of heating types such as natural gas.
- Reducing our financing exposure to fossil fuels, for example our commitment to reduce our exposure to coal to close to zero by 2025; or our portfolio reduction target for Upstream Oil & Gas.
- Financing the generation of electricity, with renewables accounting for 64% of power generation loans outstanding at year-end 2020. This includes wind, solar, water and geothermal power.
- Identifying transition risks for our energy sector and non-energy sector clients, including the risks stemming from changing policies and regulations. Clients are encouraged to decarbonise and make their energy mix greener.

2. Efficiency gains

Significant strides need to be made in improving energy efficiency for buildings, appliances, industry, vehicles, and more. Average energy efficiency rates should improve in the 2020s to reach more than three times the average of the 2000's and 2010's. We contribute to this challenge in a number of ways:

- We set targets for on improving the energy efficiency of our own buildings, lease vehicles, and data centres.
- By setting energy intensity targets under Terra, for example in transport and logistics – we're able to make a contribution to how these sectors are contributing to a more energy efficient economy.
- Providing advice and sustainable financing solutions to clients improving their energy efficiency. For example transport clients improving the efficiency of their vehicles, vessels, and aircraft; and mortgage customers improving the efficiency of their homes.
- Increasing client engagement on climate transition risks such as carbon pricing and market changes, along with consumer preferences shifting to greener products and environmental risks such as pollution, thereby fostering efficiency gains and circularity.

7 https://www.iea.org/reports/net zero-by-2050

3. Reducing consumption and waste

Change is required in how individuals and entities consume resources and produce and process waste. The solution requires changing behaviour, and should be supported by a systematic shift to a circular economy. We contribute to this challenge in a number of ways:

- We continually reduce our use of key resources like water, energy and paper. This includes the recycling and re-use of materials including paper, e-waste, and even excess heat generated by some of our data centres.
- Steering approaches, particularly those related to alignment with the EU Taxonomy, will help to steer our lending portfolio towards sustainable companies that are improving their use of materials and approaches to re-using and recycling resources.
- Providing advice and sustainable financing solutions to clients improving their consumption and resource circularity. For example, we provided a green bond to BASF to support their chemical recycling.
- Increasing client engagement on environmental risks such as pollution and waste management, including transition risks stemming from shifting consumer preferences. In addition, developing sector waste standards, for example the Responsible Ship Recycling Standards, jointly established by ING.

4. Scaling technology

Until 2030 society is relying on proven technologies such as renewable power, electric vehicles and insulation to reach necessary CO2 reduction milestones. All of these technologies need to be scaled, deployed and applied at a much more rapid pace. Major innovation is needed to develop and scale up the technologies that are expected to deliver reductions beyond 2030, such as carbon capture and storage and hydrogen. We contribute to this challenge in a number of ways:

- In our buildings, vehicles, and the kinds of IT equipment and facilities we use, we play a role in purchasing and scaling new technologies within our operations.
- Developing pathways with other stakeholders for technologies to reach scale. For example In 2021, ING also joined others to launch the Net Zero Steel initiative, to determine the technology pathway for that sector.
- Providing advice and sustainable financing solutions to clients scaling key technologies driving the transition. For example INGs work on the New Energy Technology initiative supporting CCS, hydrogen and energy storage.
- Increasing client engagement on climate risks towards encouraging investment in new technologies which reduce GHG emissions, thereby mitigating transition risks, and bringing solutions to new technology financing.

5. Natural Carbon Sinks & Ecosystems

Natural carbon sinks, including forests, oceans and wetlands naturally manage the world's carbon balance. These must be protected from further deterioration, and supported in their recovery. This is also critical to prevent further loss of biodiversity and a range of other environmental risks. We contribute to this challenge in a number of ways:

- Adapting our buildings to include outdoor and green spaces, urban gardens, and installations such as beehives and birdhouses.
- Currently we use our ESR Framework to steer our lending to avoid negative impact on high-value ecosystems. As we build our approach we also expect to steer our portfolio towards contributing to greater biodiversity and nature-based outcomes.
- Providing advice and sustainable financing options to clients improving their impact on biodiversity, for example financing food and agriculture companies where improvements can be made to how their ingredients are tracked.
- Preventing environmental and biodiversity risks in carbon sink areas through our ESR policy and framework. These set our standards to prevent financing to risky activities in carbon sink areas, and outline how we avoid negative impact on several specific high-value ecosystems.

Timeline of our climate action

Our journey of climate action started much earlier than shown below, for example when we launched our first ESR policy in 1997, or when we created the Groenbank in the Netherlands in 1998. In this timeline we share our action from 2015, as this was the year when our endorsement of the Paris Agreement turbocharged our activities which would become the basis of our integrated climate action approach.

2015

- ING officially endorses the Paris Agreement.
- ING signs the commitment letter of the Science Based Targets initiative.
- ING issues its first Green Bond.
- ING commits to no new coal fired power plants financed.

2016

- ING partners with Navigant to pilot a financed emissions methodology, which helps indentify the most climate-relevant sectors.

2017

- ING partners with 2DII, to translate their PACTA approach for corporate lending.
- ING issues the first sustainability-linked loan issued with Philips.
- ING starts capturing our progress on climate risks and opportunities according to the TCFD in our Annual Report.
- ING commits to phase out coal to close to zero by 2025.
- ING establishes first Climate Change policy as part of the ESR Framework.

2018

- ING announces ambition to steer portfolio towards the Paris Agreement.
- We are joined by four peers in the Katowice Commitment, jointly pledging to align our portfolios with the Paris Agreement.
- ING chairs UNEP FI's Banking Committee, which initiated the development of the Principles for Responsible Banking.

2019

- ING is joined by more than 20 banks in the 2DII PACTA pilot project.
- ING joins the SBTi's Expert Advisory Group.
- The Katowice Commitment underpins the UNEP FIs Collective Commitment to Climate Change, launched by 38 banks and co-chaired by ING.
- ING is a founding signatory of UNEP FI's Principles for Responsible Banking.
- ING is a founding signatory of the Poseidon Principles.
- ING publishes first Terra Progress Report.
- ING joins Phase II of UNEP FI's TCFD pilot.
- ING carried out an internal climate risk stress test.
- Financed the world's first Sustainability-linked Derivative in 2019 – with SBM Offshore.

2020

- Joined the Evidence for Impact Partnership with 2DII.
- Published our first Climate Risk Report
- Commenced climate risk heatmaps across WB sectors.
- Published our second Terra report.
- Submitted our first Poseidon Principles progress report.

2021

so far:

- ING joined the NZBA in support of reaching net zero by 2050 or sooner.
- ING announced as chair of the Climate-Aligned Finance Working Group, under the Net Zero Steel Initiative.
- ING acted as joint sustainability coordinator in the largest sustainability-linked RCF ever issued for ABInbev.
- ING published our Biodiversity position.
- Completed our climate & environmental risk heat maps for the majority of WB sectors.
- Completed a proof of concept exercise with Baringa Partners to model climate risk.
- Joined as co-financier of the Dutch National Heating Fund.
- Announced a new 2025 portfolio reduction target for fossil fuels.

Progress on our climate action priorities

Reaching net zero in our own operations

INGs climate action starts with ensuring that our own operational impact on the environment is being made responsibly. That means making sure our operations – our buildings, data centres and how we use transport – are in line with the low-carbon economy of the future. We measure and steer our progress towards this through our Environmental Programme.

Our approach

Our Environmental Programme manages our approach to reducing our Scope 1 and 2 emissions, as well as our Scope 3 emissions from business travel. It also covers our targets to reduce overall energy use, water consumption, and waste. To underpin our programme and global targets, we have successfully developed our environmental management system (EMS), which continues to drive progress towards our operational goals.

Our Environmental Programme is overseen by a Steering Committee that is chaired by our head of Tech Infrastructure, and comprises our global head of Procurement, global head of People Services, and our global head of Asset Management, Projects and Workplace.

Our Progress

Since we started measuring our progress in 2014, ING has made significant progress in improving our own footprint, in particular reducing our carbon emissions. In April 2020, ING announced new global targets for reducing our operational footprint, for 2023 and 2030. These targets will be further reviewed in line with our new commitment to net zero. The following chart shows our progress against our existing climate related targets by year end 2020:

Table 1 Energy and carbon reduction progress

Theme	Indicator	Unit	2014 figures	Target (baseline 2014)	Target year	FY2020
Energy	CO_2e emissions (scope 1+2)	kilotonne CO_2e	70	–80%	2022	–76%
				–90%	2030	
Energy	Energy consumption	GWh	409	–65%	2030	–34%
Energy	Renewable electricity	%	77%	100%	2020 and ongoing	100%
Business travel	CO_2e emissions (scope 3)	kilotonne CO_2e	31	–25%	2022	–73%

The following chart shows our progress reducing our total extrapolated carbon emissions since 2014:

Table 2 Extrapolated carbon reduction progress

in kilotonne CO_2e	2020	2019	2018	2017	2016	2015	2014
Coverage (% of employees)	99	99	96	96	96	95	90
Total extrapolated carbon	25	44	57	64	74	94	101

In addition to these efforts to reduce our carbon footprint, since 2007, we have compensated for 100% of our carbon emissions from Scope 1 and 2, and Scope 3 business travel through the purchase of Voluntary Carbon Units (VCUs). Currently the majority of these VCUs originate from a high impact Acre Amazonian Rainforest REDD+ Portfolio in Brazil.

Green Buildings Initiative in The Netherlands

At ING in the Netherlands, our Corporate Facilities team have been running a strategy to improve the environmental impact of our corporate offices and branches. The programme has seen some excellent results so far, including this progress in 2020:

- **We added three new BREEAM certifications at our corporate offices, reaching six in total. For our bank branches, we added 10 new BREEAM certificates, reaching 15 now certified. This includes a BREEAM certification for our branch on the Herengracht, which is classified as a listed building.**
- **We added 328 solar panels on the roofs of ING buildings in Almere, Nijmegen, Breda and Purmerend. We now have more than 5,984 solar panels to service ING buildings (including 3,450 on a nearby solar field in Diemen related to the Cedar building).**
- **Two additional buildings had green roofs installed, covering more than 1,084 m² in total.**
- **54% of our 'freehold' offices have achieved an A energy label, and 83% of the 'leasehold' offices have achieved a green label (energylabel C or higher).**

Next steps

- Over the next year we will update our Environmental Programme targets to reflect our new commitment to net zero by 2050.
- In June 2021, ING joined the UN Climate Neutral Now pledge. Through this partnership we aim to accelerate our efforts to a net zero future by means of our own operations.
- Many colleagues at ING continue to work from home. With this in mind, we've started to engage colleagues to find ways to improve the energy efficiency of their homes. For example in Belgium, we worked with energy provider Engie to support colleagues with access to the installation of solar panels, home batteries, and more efficient heating systems. We'll continue to explore more such initiatives.
- We've taken the first steps towards assessing the biodiversity impacts of our buildings at ING, and look forward to integrating this new element further into our Environmental Programme.

Steering our portfolio with Terra

As a global bank we have a huge opportunity to make an impact for the better by bringing aspects of fighting climate change into our dialogue with clients and financing decisions. In 2018, we announced our commitment to steer our lending to align with the well-below two-degree goal of the Paris Agreement. Since then, we've made progress on that ambition, as reported in this 2020 year-end disclosure. Now, as we move to our new commitment to net zero by 2050, our evolving Terra approach will continue to guide us in reaching our goals.

Our approach

ING's Terra Approach has been developed as an inclusive, forward-looking and engagement-driven approach that has allowed us to set ambitious, time-bound portfolio targets for aligning with science-based scenarios. The approach was developed and continues to evolve in partnership with the 2˚ Investing Initiative (2DII).

Our Terra approach favours inclusiveness and acknowledges that real change will be at the core of our clients' businesses and their strategies for transition. Terra draws primarily upon two methodologies for target-setting, namely the Paris Agreement Capital Transition Assessment (PACTA) and the Science Based Targets initiative's Sectoral Decarbonization Approach (SBTi SDA). The approach is built on two key principles:

1. The sector-based approach which respects the fact that each sector has its own transition pathway, or technology roadmap, for it to contribute to a low-carbon world. This approach enables us to create impact through steering these key sectors towards technologies that underpin a low-carbon future.
2. The prioritisation of asset-level data for accurate measurement, acknowledging that the impact our clients make is driven by the types of vehicles, buildings, aircraft, ships and plants that they own, operate or produce. In other words: their assets.

Our progress

The alignment of our portfolio per sector is measured via our Climate Alignment Dashboard which shows the CO_2 intensity per sector of our portfolio (year-end 2020) compared to the market and the relevant climate scenario.[8] There are two exceptions to this as explained under the section on Targets and Indicators. All figures are year-end 2020, except for the shipping sector[9] and unless stated otherwise.

8 See technical annex for definitions and methodological explanations.
9 Shipping figures show 2019 results, as updated during our reporting under the Poseidon Principles in December 2020.

Climate Alignment Dashboard

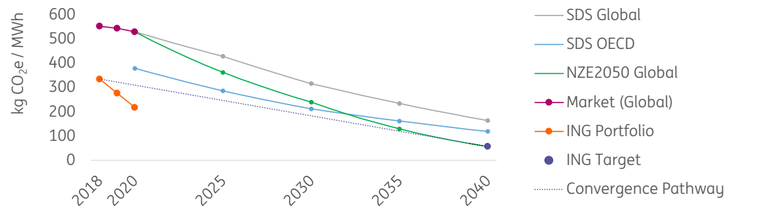
Portfolio view - Outstandings as of year-end

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 and OECD Decarbonisation Pathways

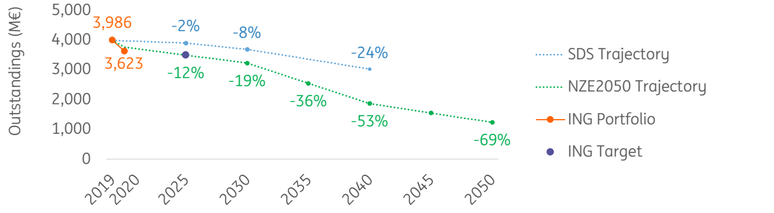
ING vs. pathway **-29.6%**



Upstream Oil & Gas

Absolute Financing Trend Reduction Pathway

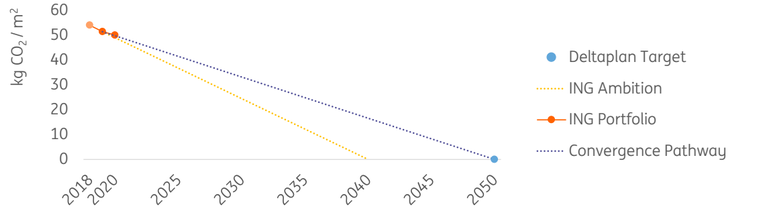
ING vs. NZE2050 **-3.6%**



Commercial Real Estate

NL Decarbonisation Pathway

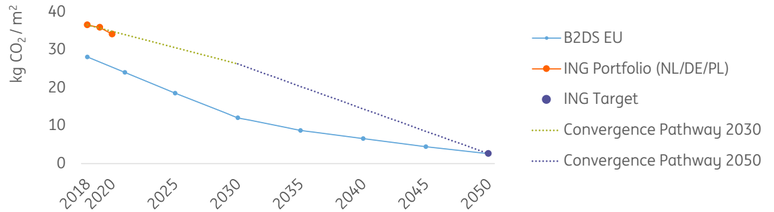
ING vs. pathway **+0.5%**



Residential Real Estate

European Union Decarbonisation Pathway

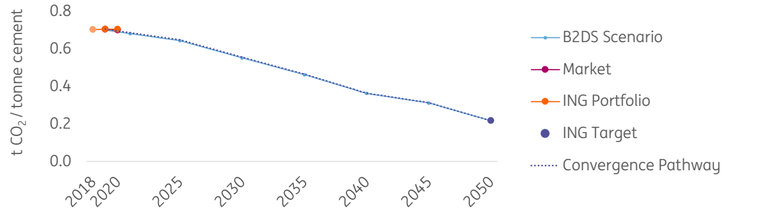
ING vs. pathway **-2.1%**



Cement

Global Decarbonisation Pathway

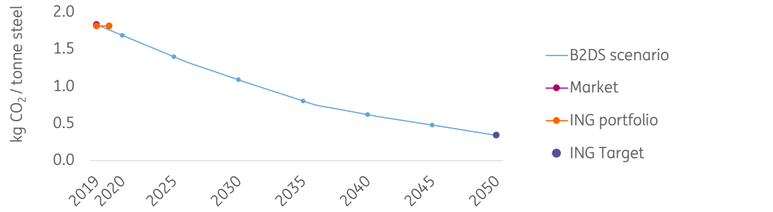
ING vs. pathway **+1.3%**



Steel

Global Decarbonisation Pathway

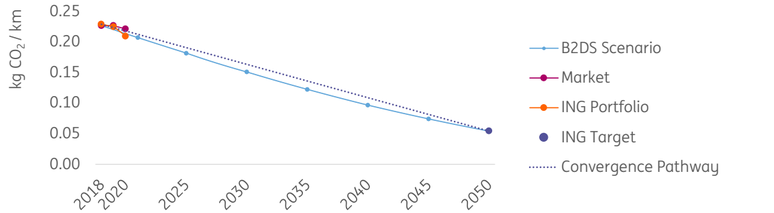
ING vs. scenario **+3.0%**



Automotive

Global Pathway to Zero Tailpipe Emissions

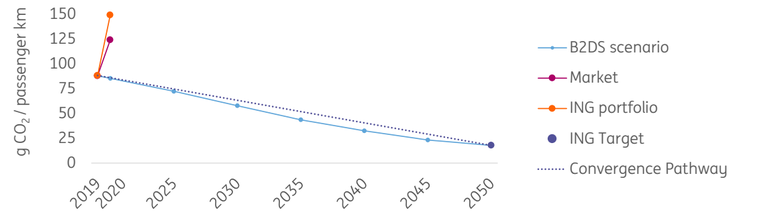
ING vs. pathway **-3.8%**



Aviation *

Global Decarbonisation Pathway

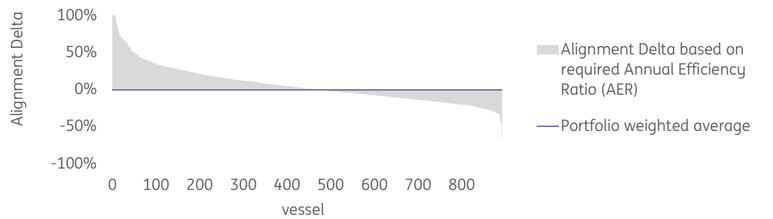
ING vs. pathway **+74.9%**



Shipping

Alignment delta 2019YE

alignment delta **-0.4%**



* Despite a significant reduction in absolute emissions, the aviation sector experienced a severe fluctuation in CO_2 intensity due to COVID. Please refer to the sector deep-dive for further information.

> ING's Terra Approach acknowledges that banks have a significant role to play in combatting climate change through our financing. We're committed to reaching our new ambition of net zero by 2050, and are looking forward to updating each of our sector targets to align with this new ambition."
>
> – Andrew Bester, global head of Wholesale Banking, Management Board Banking

In January 2021, ING was rated as 'strong' for ESG by S&P Global Ratings, which is one of the highest scores disclosed. The rating recognised ING's Terra approach as a particular strength in our management of environmental factors. "Our ESG Evaluation score of 83 on ING mainly reflects our belief that the bank is among the strongest players in the banking industry in terms of its ability to leverage its role as financier to influence society's transition to a more sustainable and low-carbon economy." – S&P

Targets and indicators

The Climate Alignment Dashboard displays the climate-aligned portfolio target, the market average, the scenario line and ING's decarbonisation pathway per sector towards the portfolio target.[10] There are two exceptions to this. Firstly, for upstream oil and gas, we show the absolute portfolio reduction trend in line with the relative climate scenario with our 2019 upstream portfolio as our base year for reduction. Secondly, for shipping, we show the average alignment delta: the difference between the actual and required annual efficiency ratio per vessel.

A green indicator means that we are on track with or are outperforming the benchmark for a sector. An amber indicator shows sectors that are almost on track as they deviate from the benchmark by a maximum of 5%. ING considers these can be improved within a shorter timeframe. A red indicator, identifies a portfolio that deviates more significantly from the benchmark and is therefore likely take longer to improve.

10 While the decarbonisation pathway is indicative of our portfolio's direction of travel to achieve the portfolio target, we expect that circumstances will change as we move along the transition pathway. However, these short-term changes should not imply that we cannot achieve the long-term portfolio target, which is prevailing.

Portfolio steering

This past year we have intensified our efforts to further embed Terra into ING's decision-making processes and portfolio steering strategies. This has enabled ING to mobilise our front office sector teams to help steer portfolios, either through client engagement or by making choices about who and what we do or do not finance.

Steering is different for each sector, as sectors build Terra alignment targets into their sector strategy processes in different ways. This includes using Terra dashboards to guide overall financing policy direction, and using specific insights that can be used to assess particular transactions with clients.

We have road-tested client-level climate alignment dashboards that provide in-depth analyses of how individual clients' current performance and future strategies compare to climate scenarios, peers and the market. These dashboards facilitate more focused client level steering with clients about their own strategies, which ideally leads to positive change and greater impact.

Methodology refinement

As data becomes more available and accurate, and as scenarios are updated, we aim to continuously improve our methodology. If needed, we ensure that any changes to the methodology or data that materially impact our reporting are clearly communicated, and any restatements are indicated and explained.

In this 2021 disclosure, we have updated the scenarios we apply to power generation and fossil fuels, as shown in Table 8 in the Technical Appendix. We have also applied more granular emissions factors to calculate CO_2 emissions for the automotive, residential real estate and cement sectors, which makes it possible to report more accurate figures. While we always strive to obtain more granular emission factors, and, more generally, to improve the accuracy and quality of the data that we use, transitioning from one dataset to another presents its own set of challenges. Year-on-year comparisons, for example, can prove impossible, as new, improved data sets often lack backward-looking data points to enable a comparable restatement of previously reported figures. In the sector deep dives, we strive to explain and indicate as clearly and transparently as possible where and how figures have been restated.

Climate data and methods are constantly changing. We believe, however, that this should not prevent us from taking action or hinder our commitment to reporting. At the same time, we are committed to working with our partner 2DII, our PACTA pilot peer banks, our fellow signatories to UNEP FI's Principles for Responsible Banking and NZBA to further refine and develop our methodologies. We also continually welcome input from clients, peers, academics, policymakers, regulators and civil society organisations. Table 8 in the Technical Appendix gives an overview of our Terra Toolbox of methodologies and the metrics used to set portfolio targets for each sector.

Bank standardisation

Since we first committed to align our portfolios with the goals of the Paris Agreement, we have seen an increase in collaboration with our peers and convening organisations such as UNEP FI. We have continued to contribute to expert and technical papers, panels and consultations, such as SBTi's Expert Advisory Group and the Collective Commitment to Climate Action, where we serve as co-chair.

Notably, we have become a signatory to the industry-led, UN-convened Net-Zero Banking Alliance (NZBA), which brings together over 50 banks committed to aligning their portfolios with net zero emissions by 2050. The NZBA will provide a coherent framework and guidelines in which banks can operate while supporting the global transition of the real economy to net zero emissions. Another of our most prominent efforts towards standardization this year has been our leadership in the launch of the Net-Zero Steel Initiative, which is described further in our update on Metals & Mining.

We have also continued our work in building methodologies with our partner, the 2° Investing Initiative (2DII) and the PACTA pilot as well as with peer banks, including Société Générale, BNP Paribas, BBVA and Standard Chartered. We look forward to working alongside these and other stakeholders through our new membership of the Net-Zero Banking Alliance.

We continue to identify great opportunities to overcome some of the barriers of standardisation within the climate alignment methodologies and we reaffirm our call for a viable standard to emerge for banks globally to measure the climate alignment of their loan books: a standard that allows for comparison and aggregation of data across the sector.

Scope

We have made a deliberate choice to focus initially on the nine sectors in our portfolio that contribute significantly to the global carbon footprint. Expansion will require more data, new scenarios and more iterative testing phases. To that effect, we are discussing with peers and partners which sectors should be included next. In this year's report, we expanded the scope of our reporting for the residential real estate sector, now capturing our mortgage portfolio in Poland and Belgium for the first time.

Evidence for Impact

While using our Terra approach to align with net zero means reducing the CO_2 intensity of our portfolio, it does not necessarily mean that CO_2 intensity will be reduced for a global sector or that emissions in the real economy are falling. Challenges, such as 'portfolio leakage', where a portfolio's high carbon or green share is reduced simply by being redistributed to another financier's portfolio, present limitations on how much a bank can control in relation to climate impact, especially when applying capital allocation choices as a tool for steering.

To address these challenges, ING joined the Evidence for Impact Partnership, launched by 2DII. The programme aims to support financial institutions in setting up science-based climate contribution strategies by developing initiatives such as impact tools. For example, the first version of the Climate Action Guide, a tool backed by scientific evidence to support Financial Institutions in understanding and implementing climate actions, was released in 2020 and road-tested by a number of partners including ING. In 2021, an updated version of the Climate Action Guide was released and is now being piloted. Other tools, such as the Climate Action Planning Template and Climate Action Tracker, which help Financial Institutions record and submit climate actions and track their implementations and contribute to building scientific evidence of their impact, are being developed by the Evidence for Impact Working Group.

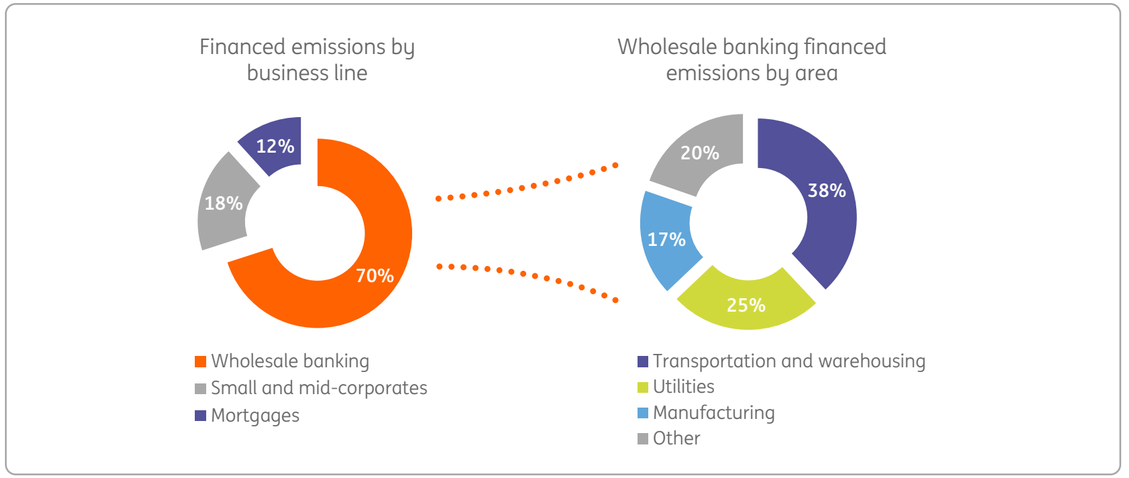
Financed emissions

As part of our continuous efforts to monitor our climate impact, in 2021 we started a project, in collaboration with Klima.Metrix, to measure the absolute amount of GHG emissions associated with our loan book[11]. While we believe that the best way for banks to have a positive impact on the climate is by steering portfolios using emission intensity targets rather than absolute emissions targets, we also believe that keeping track of and transparently disclosing the amount of financed absolute emissions is an important step towards climate action. Such conviction is also reflected in our commitments with the NZBA and the TCFD reporting guidelines to disclose GHG emission figures, and align with the expectations of stakeholders such as governments and regulators.

Therefore, going forward, we will report on the amount of absolute emissions associated with our loan book. These figures will be provided on top of the climate-alignment metrics disclosed using the Terra approach, which will remain as our indicators for steering our portfolio. In fact, while absolute emissions are helpful in providing a more comprehensive picture of ING's climate efforts by providing a snapshot of the current progress of our portfolio, the Terra methodology provides tools that are forward-looking, engagement-driven and sector specific to measure and steer portfolios.

In this project, we were able to measure the amount of absolute GHG emissions financed through our loan book. 69% of the portfolio is currently measured using methodologies compliant with The Global GHG Accounting and Reporting Standard for the Financial Industry developed by PCAF. We aim to increase the accuracy and granularity of the data in our next report. Additionally, we aim to include our investment portfolio.

Figure 2 Financed Emissions by Business Line and Area



The results confirm that we are focusing our climate action on the right areas. We are already covering the sectors that are largest contributors to the emissions associated with our loan book with our Terra approach. More specifically, the results provide an estimate of 42 million tons of CO_2 from our loan book in 2020. Our Wholesale Banking loan book, which represents about 70% of the total emissions, can be further broken down into contributions in three main areas[12]. These are transportation and warehousing, utilities and manufacturing, areas which are also covered under our Terra approach. Additionally, via Terra, we also cover the vast majority of the mortgages book.

11 Scope 3.15 category. 90% of the loan-book is covered, including both WB and RB loans.
12 These areas corresponds to the following NAICS 2-digit industry codes: 48-49 for transportation and warehousing, 22 for utilities and 31-33 for manufacturing.

Next steps

- One of our critical next steps is to define interim targets per sector and expanding our portfolio coverage as we align to our new ambition of net zero by 2050 or sooner.
- We plan to further develop our Terra approach in order to meet the requirements of our partnership with NZBA.
- We also look forward to continuing to increase the scope of our alignment reporting, for example by including our third and final Fossil Fuel Sector indicator, by expanding our Commercial Real Estate reporting beyond the Netherlands, and by including additional countries in scope for our Residential Mortgages portfolio.
- We will continue our work with the Evidence for Impact Partnership, to support their multi-year study.
- We will continue to build our approach to steering as we further align our climate strategy with initiatives such as the EU Taxonomy.
- We will continue to leverage insights from our Terra approach into commercial strategies and products.

Financing and advising our clients

ING has set a priority on financing and advising clients to reach net zero. Our work in this area is led by our Sustainable Finance team that sits within Wholesale Banking. The team brings together expertise on innovation and sustainability as they advise clients on their sustainable investments and strategies, and provide the best financing solutions to meet their needs.

We believe that companies that take sustainability seriously are likely to be the most successful in the future. Research shows that companies that lead in sustainability are more innovative, perform better financially and have better credit ratings. Sustainability can therefore be a source of competitive advantage. Our recent research 'Now or Never: a new bar for sustainability' in partnership with Longitude showed that climate change is at the top of investors' ESG priorities – 52% cite this as a top priority, and 57% of corporates say the pandemic has accelerated their green transformation plans. The same research showed 74% of investors have increased commitments for portfolio alignment to the goals of the Paris Agreement, while 72% have adopted more ambitious targets for sustainability outcomes of ESG investment. This increased focus on corporate sustainability commitments leads to a sustainable debt market which continues to expand.

As a global bank, we have the opportunity to use our financial products and services to help clients in their sustainability transition and we are motivated to back the companies that we see as winners in the economy of tomorrow. The growing prominence of sustainability in company boardrooms and decision-making enables us to have a more strategic dialogue with our clients. We can advise them on their transition plans, on where to invest and divest, and connect them to strategic products to help them achieve their sustainability targets.

The growing prominence of sustainability in company boardrooms and decision-making opens the way for us to have a much more strategic dialogue with our clients. We can advise them on their transition plans, on where to invest and divest, and connect them to strategic products linked to achieving their sustainability targets.

Our Approach

Our sustainable finance team approach is to identify where we can help clients integrate a sustainability focus, whether that entails implementing more alternative energy sources, recycling waste, developing social bonds or financing green buildings/ infrastructure. The team then works to determine which of our sustainable finance products and services can best help our clients with their needs. These products and services can be divided into four categories outlining the part they play in the road to sustainability:

- **Accelerating the green economy:** As we seek to fund significant growth in our green asset portfolio that will accelerate the green economy, green bonds and loans form an integral part of our sustainable finance strategy as they are used to fund specific

green/sustainable projects. To support the strong growth of our own sustainable finance portfolio, and to meet the green funding needs, we designed a Green Bond Framework under which we have issued multiple green bonds. The proceeds will be used for financing ING's portfolio of green loans (wind and solar energy) and for financing green buildings. Other categories are clean transportation, pollution prevention and control, and sustainable water management.

- **Financing the transition:** we advise our clients on their transition journey by analysing their capital structures and investment and divestment needs to meet the climate ambitions, regulatory requirements and investors appetite. We also incentivise customers to achieve certain green milestones. This is a great way of providing innovative solutions that can help companies transition to a low-carbon business model, and is normally supported by way of sustainability-linked loans and bonds. ING was the first bank to link financing to how well a company performs on sustainability with our sustainable linked loan to Philips in 2017. Since then this kind of financing has become far more widespread and we are expanding this mechanism to include other products, such as to the world's first sustainability-linked derivative in 2019. Each sustainability-linked product is tailored specifically to the client. The targets we set are ambitious as we aim to have a real impact. By setting high standards, we're protecting the credibility of the sustainability-linked market.
- **Pioneering for the future:** Reaching climate targets is not possible without developing new sustainable technologies such as new battery technologies, and new sustainable business models such as product-sharing business models. But these can require innovative financial solutions. Mainstream banks in general might hold back on new technologies as they need to prove their maturity and market potential. As we believe that companies with sustainability in their DNA will be the winners in

"We can make the biggest impact through our financing, and we believe that in the years ahead all finance should become sustainable finance. At ING we continue to work with our clients to build innovative approaches for how to finance the transition, and we look forward to increasing this innovation in the years to come."

– Leonie Schreve, global head of Sustainable Finance

tomorrow's economy, we have created pioneering financing teams such sustainable structured finance and sustainable investments. These teams help clients to step up their sustainability goals by providing project or structured finance solutions and/or risk-bearing capital, including equity (investments) and subordinated debt.

- **Sustainable sector expertise:** We pair local and global sustainability insights with deep sector knowledge and financial expertise. For example in the renewables and power sector ING has been a leading project financing bank since the mid-1990s when teams were established in Amsterdam, New York and Singapore. ING has established itself as one of the top 10 globally active European energy sector banks and as a key lender to the renewables sub-sector. The team's focus is on core technologies (solar, on/offshore wind and selectively geothermal), and increasingly on battery manufacturing and battery storage solutions.

Each of these categories are further supported by the generation of sustainability insights through ING Research.

Our approach to Sustainable Finance is also shaped by regulation, particularly at EU level. The EU Green Deal and the EU Taxonomy on Sustainable Activities (EUT) will have impact on our clients, and ING. The taxonomy will help to establish which activities can be considered as environmentally sustainable and it can also be used as a framework for decarbonisation – it will encourage transition. Our clients need to report the percentage of revenues from sustainable products/services and the associated CAPEX and OPEX and ING needs to report which percentage of their financing is related to these activities. We'll continue to advise our clients on their transitions as they interact with such frameworks.

Internally, we have aligned our existing sustainable finance scorecards with the EU Taxonomy, to assess how our various uses of proceeds are being labelled and ensure these are correctly labelled where they are considered sustainable under the EUT. The EU is a frontrunner in developing this Taxonomy, and as others from the US, Singapore, UK, Japan, and China also develop similar standards we hope to see these various frameworks align, and so ensure consistency across markets.

While there has been a large focus on determing what is sustainable and what is not, we have also promoted the need to focus on the activities and sectors that are transitioning, and on transition finance. A key element within transition finance is a focus on the sector-specific climate pathways, where we have continued to engage with stakeholders, including the Platform on Sustainable Finance, who recently published a draft paper on transition finance addressing this. Transition finance will be featured in the ECs renewed Sustainable Finance framework and we look forward to engaging further on this.

Our progress

We continue to fund companies and sectors that are helping to accelerate the transition towards a net zero future. This includes funding projects that advance renewable energy, the circular economy and help combat climate change. We support these clients though our climate finance portfolio, and we serve clients considered to be environmental, social and governance (ESG) leaders in their respective industries.

Our sector and sustainable finance teams have financed sustainable projects across a range of areas: 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 waste and other water treatment and supply and circular economy solutions.

When financing positive change, we are aiming for year-on-year growth in the number of mandates in our sustainable finance business. This includes sustainability-linked products and use-of-proceeds products (such as bonds and loans), advisory services and sustainable equity.

In 2020, ING supported the issuance of 62 green-/social-/sustainability-linked bonds & schuldscheins, 54 green-/sustainability-linked loans, 19 sustainable structured finance transactions, and four sustainable investments transactions. With a total of 139 sustainable finance transactions in 2020 compared to 123 sustainable finance lending and bond transactions in 2019 we met our target for the year-on-year growth.

We've seen continued growth in the first half of 2021. 133 transactions were closed, including 63 green-/social-/sustainability-linked bonds & schuldscheins, 53 green-/sustainability-linked loans, 9 sustainable structured finance transactions, two sustainable investment transactions, and six other category green finance transactions (such as ESG advisory and green guarantees).

In the Bloomberg league tables[13] ING ranks fourth for *Green, Social and Sustainability EUR Bond Issuance* with more than €3.8bn in bonds issued, and sixth for *Green and Sustainability-linked Loans* with more than €7.5bn in syndicated loans.

13 As of 1 July 2021.

Sustainable Financing in Action

As an example, ING has acted as joint sustainability coordinator in the largest sustainability-linked revolving credit facility (RCF) ever issued. The $10.1 billion RCF for Belgian-based multinational drinks and brewing company Anheuser-Busch InBev (AB InBev) was provided by a consortium of 26 global financial institutions. In addition to being the largest Sustainability-linked Loan ever, it is also the first for a publicly listed company in the beverage sector. The milestone facility has a five-year term and includes a pricing mechanism that incentivises improvement in four key performance areas that are aligned with AB InBev's sustainability goals: Further improving water efficiency at AB InBev's breweries globally; increasing PET recycled content in PET primary packaging; sourcing purchased electricity from renewable sources as outlined in the RE100 commitment; and reducing greenhouse gas emissions as part of the science-based climate action goal.

Our Sustainable Finance team was also recognised at Global Finance's inaugural 2021 Sustainable Finance Awards, taking the top spot in the categories for 'Outstanding Leadership in Sustainable Bonds' and in 'Sustainable Loans' in the highly competitive Western Europe region. At the same time Bayfront Infrastructure Management was awarded the 'Outstanding Leadership in Sustainable Bonds – Corporate' award for their recent infrastructure asset-backed securitisation (IABS) issuance. ING acted as joint global coordinator and sole sustainability structuring advisor for this transaction.

In December 2020, ING's ESG rating was upgraded to 'AA' from 'A' by MSCI, an investment research firm that provides indices, portfolio risk and performance analytics to institutional investors. ING was recognised as a 'leader' among the 192 global banks rated by MSCI, where they noted our approach to financing related to environmental impact.

Next steps

- Continuing to engage with clients and empower them with insights, financing solutions, and advice to support their sustainable transitions.
- Further develop our sustainable finance targets in connection with our climate finance approach and our ambitions to improve our green asset ratio.
- Encouraged by the EU Green Deal European companies are likely to increase their investment in sustainable product development and sustainable production processes. ING looks forward to helping clients finance this by offering an integrated advisory solution, combining our knowledge and expertise from the different disciplines within our global sustainable finance team. This includes, providing advice on M&A and ESG advisory (advising corporates on their transition towards becoming more sustainable and how to work towards improving their ESG rating).
- We expect 2021 to be another exciting year in which we foresee the sustainable debt market will continue its growth. This will be fueled by the EU Taxonomy regulation and further accelerated by embedding our Terra targets (to steer our lending portfolio towards net zero) into stronger bank-wide KPIs.
- We continue to play our part by financing a social and green recovery to the corona pandemic that creates jobs, speeds up growth and builds more resilient societies – part of our support to Build Back Better. Launching the first Social Covid-19 bond illustrates this well. Looking ahead, we believe that this crisis can help to accelerate innovative sustainable progress, and we see that clients remain very much interested in sustainable finance structures. We plan to continue our innovation and client engagement on this front.

Managing climate and environmental risks

Climate change is increasingly contributing to society's exposure to a range of acute and chronic physical risks. At the same time, the transition to a net zero economy required to address the challenge can also create exposure to transition risks, such as stranded assets. These risks, and the financial implications attached will inevitably impact both ING's clients and our balance sheet, hence a critical process is required to assess these risks and integrate them into our overall risk management framework.

Our approach

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

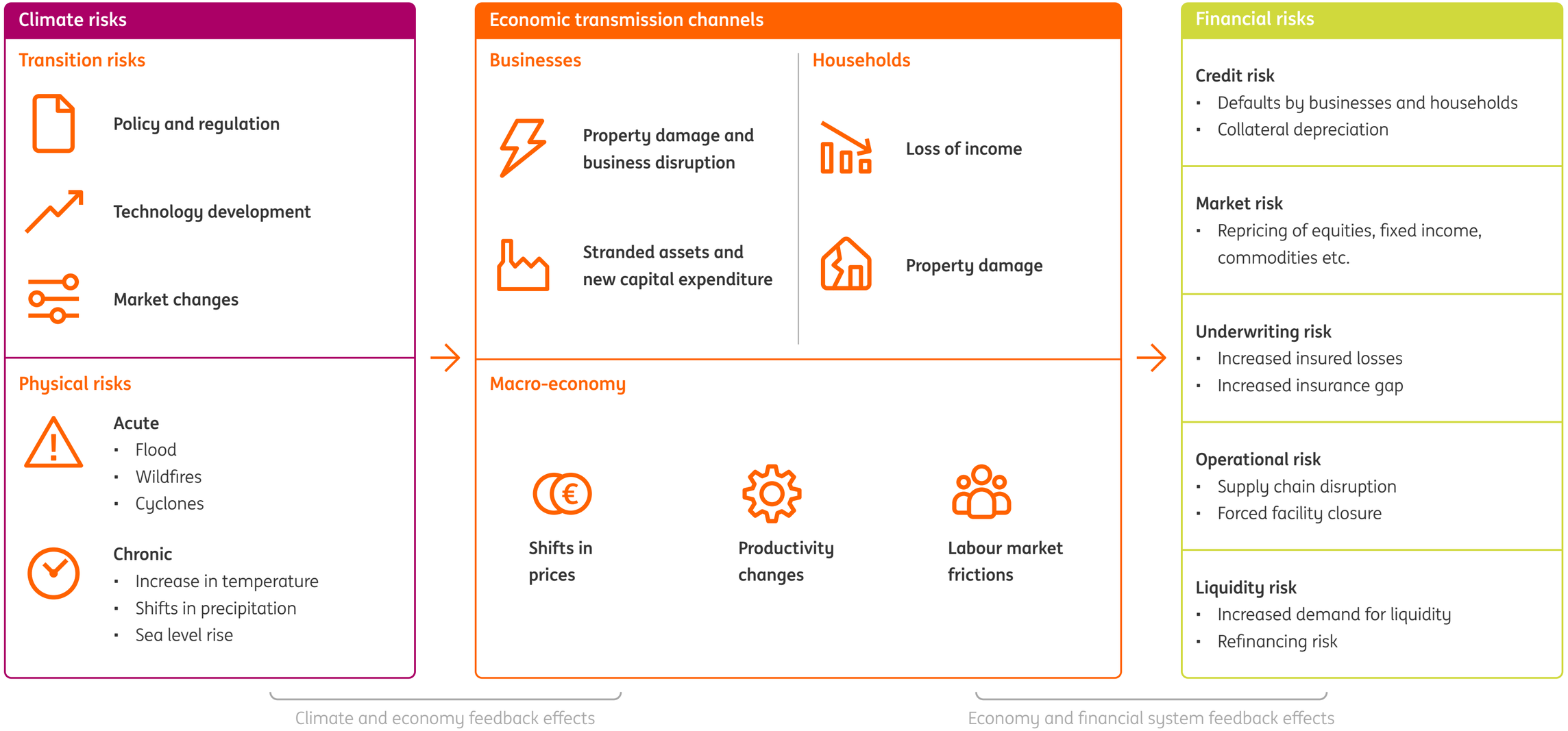
Managing climate risks covers both physical risks and transition risks:

- **Physical Risk:** These risks can be climate-related event-driven (acute) such as increased severity of extreme weather events (e.g. cyclones, droughts, floods and fires) or longer term (i.e. chronic) when they arises from progressive shifts, such as increasing temperatures, sea level rises, water stress, or biodiversity loss.
- **Transition Risk:** these can be climate-related or environmental risks from policy, legal, technology and market changes occurring in the shift to a lower-carbon economy. This could result in stranded assets and/or markets by the loss of value of assets that are no longer part of a more sustainable world.

The potential impacts that physical and transition risks could have on households, businesses and the macro-economy ultimately require us to view climate risk as a risk that has an impact on various financial risks. As shown in the following diagram these feedback effects call for the need to translate climate into financial risk models that assess risks such as credit, market, liquidity and operational risks.

Figure 3 Climate risks to financial risks

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



Our approach to climate risk management focuses on identifying climate risks, understanding the severity of these, and determining how to manage them. This is a developing area and the complexity of such an analysis is highlighted by the wide range of possible future climate pathways and their economic impacts. This differs across sectors, geographies and financial products. Furthermore, our approach informs our longer-term strategic choices and the potential financial impacts.

In developing our approach, we have been guided by various regulatory expectations and recommendations, such as the ECB's Guide, as well as exchanging best practices with our peers through industry working groups. This collaboration is critical to building a standardised approach to climate risk management and reporting.

Our approach contains five pillars:

1. **Identifying Risks & Impacts:** Periodically identifying risks for each relevant category and assessing the materiality of impacts these may have on our business environment. We prioritise the portfolios presenting the highest exposure to climate risk.
2. **Scenario Analysis:** Using scenario analysis and scenario-based stress testing to better understand the impact of climate change on our books, which then informs business strategy, risk appetite and risk management.
3. **Governance:** Establishing a governance approach that ensures the proper management of climate risk within the business and all three lines of defence. It includes the extension of governance related to ESR.
4. **Risk & Business Strategy:** Reflection on climate risks in defining business strategy and risk appetites. It includes developing our climate policy framework and the integration into risk modelling. Next to adressing the integration of climate risk in the full credit cycle process this also includes the integration in market, liquidity and operational risks. Achieving this requires the integration of climate risks into modelling, pricing, and other risk types.
5. **Reporting:** This involves transparently reporting on our progress to a range of internal and external stakeholders based on a sound risk, finance and business data and reporting infrastructure.

Our progress

Since our first climate risk report, we have continued to make progress in developing and implementing our approach to climate risk.

Identifying Risks & Impact

Completing Heatmaps

In the later part of 2020 and early 2021, we completed the first phase in our climate risk identification process. This included finalising and implementing the methodology for our heatmap process which were extended to also cover physical risks and applying these to the majority of both Wholesale and Retail business lending. The heatmaps demonstrate climate related and environmental risks using ECB categorisation, which are then split into more granular risk factors, derived from external guidance provided by ECB, TCFD and BaFin, among others. Table 3 shows the risk drivers and risk factors for both physical and transition risks that were covered.

Table 3 Climate & environmental risk heatmap factors

Risk Drivers	Risk Factors
Physical risks	
Extreme weather	Increased number and severity of forest fires
	Increased number of storms, hurricanes, tornadoes and typhoons
	Increased frequency and severity of floods (coastal, river, fluvial)
	Changing rainfall patterns and increased rainfall intensity leading to extreme weather events
Chronic weather patterns	Changes in temperature (incl. increasing average temperature, higher maximum and minimum temperatures)
	Decrease in precipitation
	Rising sea levels (and increased saltwater intrusion)
	Melting of permafrost and land ice
	Droughts
	Shifts in seasons
Water Stress	Water scarcity & management (in water scarce areas)
	Ocean acidification and decrease in marine life
	Falling levels of ground water
Resource scarcity	Natural resources depletion or depleted areas
	Resource use & management
	Energy use
	Supply chain resource use & management
Biodiversity loss	Biodiversity management & land use (transformation)
	Extinction Wildlife / Endangered species (Fauna)
	Reduction in Flora
	Changes in pest and disease distribution and prevalence
	Supply Chain biodiversity management
Pollution & waste	Air Pollution & carbon emissions management
	Land Pollution & waste management
	Water Pollution
Other	Earthquakes & Volcanos

Risk Drivers	Risk Factors
Transition Risks	
Policy and Regulation	Environmental regulatory requirements changes / adoption
	Environmental ING policy changes / adoption
Technology	Disruptive business models (putting traditional business models at risk) & disruptive technologies
	Environmental protection, Environmental resources management
Market sentiment & demand	Legal Claims / Compensations
	Reputational Risk
	Changing market sentiment

Our front office and risk management representatives have assessed the risks per risk factor for each sector based on expert views and external research. They used a five year horizon and categorised the risks as low, medium or high for the sector in general and for the ING portfolio specifically. A double materiality view is taken for each general sector assessment, which, from an ECB perspective, means that both the environmental and social materiality[14] and the financial materiality[15] perspectives are taken into account. However for the climate risk assessment of the ING portfolio more specifically, only the financial impact has been taken into consideration so far.

The heatmaps are now being used as input for strategy and risk appetite for sectors and products. The strategies need to be updated to include an impact assessment of climate and environmental risks, linked to opportunities that arise from the transition

14 How a company's activities can have an external impact on the climate or environment
15 How the climate impacts the activities and financial performance of a company.

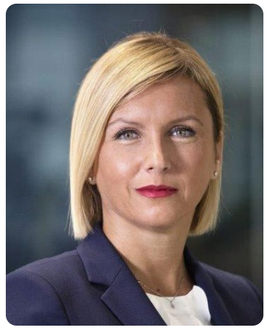
and adaptations strategies. The heatmaps, together with our ESR Framework, also support the client engagement and loan origination and monitoring process to further understand individual client exposure and mitigating measures. And the heatmaps combined with exposure figures feed our internal reporting on climate risk. The sector updates on energy and transport & logistics provide more specific information on the heatmaps.

Measuring ING's mortgage portfolio exposure to physical risks

In 2019 and 2020 ING conducted a physical risk assessment pilot including post codes from our largest mortgage portfolios in the Netherlands, Germany and Belgium. This covered approximately 65% of our mortgage portfolio. For data sourcing, we partnered with an external reinsurance company, Munich Re to assess the potential for climate hazards. Flooding was identified as the highest risk where the extent of the impact would vary quite extensively. We decided that we had to develop this approach further and to increase the geographical scope and data granularity to grow our understanding of the financial impact of climate hazards for our portfolio management. We expect to report more on this initiative soon.

Scenario Analysis

By building on the scenario planning experience as an input for long-term exposure limit-setting in the energy sector[16], we plan to invest in more repeatable and flexible processes for climate-related scenario development and stress testing as a tool for risk identification, strategy and risk appetite-setting.



"Climate change poses major challenges to our clients and their business models, and we are determined to help them to manage and prevent such risks where possible and to support their own transition. In doing so we will also protect ING from climate risks to ensure we are well positioned to finance the net zero economy."

– Ljiljana Čortan, Global Chief Risk Officer

16 For more information on the main scenarios see: https://think.ing.com/reports/break-it-or-make-it-long-term-impact-of-tech-and-policy-on-energy-transition/

We're also working with peers and industry stakeholders to help develop common scenario frameworks. In 2021 ING was one of the 20 large Institute of International Finance (IIF) member banks that worked to publish a new report: 'Navigating Climate Headwinds: Reference Approaches for Scenario-based Climate Risk Measurement by Banks and Supervisors'. With a growing number of supervisors launching Scenario-based Climate Risk Measurement exercises, this report provides useful approaches and recommendations on the use of scenario analysis and stress tests.

Scenario analysis and stress testing approaches have areas in common as they both take a forward-looking stance and both use scenarios to assess financial impact. Both approaches, however, differ with respect to their utilisation, design and potential impact in a prudential context. One of the challenges is that medium and long-term[17] climate scenario analysis is an informative tool for banks to feed internal strategic discussions and decision-making as it allows the exploration of different transition and physical risk scenarios under different horizons. However such a tool is not appropriate to inform capital requirements as it would not apply to today's balance sheets.

We recommended that scenario-based climate risk measurement exercises are conducted on a voluntary basis at more granular portfolio levels, given their informative added value. Overall these climate measurement tools should be ring-fenced from prudential activities until data, tools and understanding have improved to the point at which results are meaningful and comparable across financial institutions.

In June 2021, the Network for Greening the Financial System (NGFS) issued the second iteration of its climate scenarios. The updated NGFS scenarios now reflect commitments of countries and jurisdictions to reach net zero emissions, and have also been enriched with an expanded set of macroeconomic variables at country level. We welcome these enhancements that help create a common foundation that facilitates greater transparency and the basis for comparable results on climate stress tests outcomes.

In the update, the NGFS scenarios explore the set of six scenarios covering the following three dimensions:

1. **Orderly scenarios** assume climate policies are introduced early and become gradually more stringent. Both physical and transition risks are relatively subdued.
2. **Disorderly scenarios** explore higher transition risk due to policies being delayed or divergent across countries and sectors. For example, carbon prices would have to increase abruptly after a period of delay.
3. **Hot house world scenarios** assume that some climate policies are implemented in some jurisdictions, but globally efforts are insufficient to halt significant global warming. The scenarios result in severe physical risk including irreversible impacts such as sea level rises.

All large financial institutions operating in the eurozone will use these scenarios in the upcoming 2022 ECB Climate Risk stress test.

17 Medium and long term horizons, in climate change context, refer to respectively 2030-2040 and 2050-2080+.

We are analysing the various future scenarios available, including the NGFS scenarios, which are widely used by industry regulators. The key advantage of these scenarios is to bring alignment and consistency and therefore comparability, to the financial services industry. However, for some specific portfolios, we may still consider adapting this scenario or other developed scenarios to analyse our strategic choices linked to specific sectors or products. Internal reflection is ongoing and our energy sector, as an example, is currently conducting a thorough analysis of the recent IEA net zero scenario.

Climate change scenario analysis Proof of Concept with Baringa Partners

From June to September 2021, we conducted a proof of concept (PoC) on climate change scenario analysis with Baringa Partners, a consulting group with specific climate change capabilities. The PoC consisted of running the Climate Change Scenario Model, created by Baringa and developed in partnership with BlackRock, on a sample portfolio, covering both physical and transition risks, and using three different climate transition scenarios: 'Orderly 2 degrees', 'Disorderly 2 degrees'; and 'Hot house 4 degrees' – which are comparable to the NGFS scenarios.

The sample portfolio included 40 listed companies from the Energy, Transport & Logistics, and Metals & Mining sectors. Only external data was used, essentially sourced from Baringa and its data providers, hence no ING-specific data was used in terms of, for example, starting probability of default, credit rating, or exposure weighting. One of the key assumptions is that the companies in scope do not implement any climate transition plans over the period running up to 2050.

Output data in the different scenarios included yearly financial metrics until 2050, including revenues, various cost metrics, EBITDA, EBIT, FCF, credit rating impact, equity valuation, and probability of default for part of the sample companies. These metrics are available at a company level and can be aggregated at sector or sample portfolio levels, acknowledging that the limited sample size and selected companies are not representative of ING's actual exposure to the sectors in scope.

From the exercise, we observed that oil and gas companies in the sample sector would be the most impacted under both the 2 degrees orderly and disorderly scenarios, assuming no change in the current energy mix. This highlights the importance of transition risks for these sectors, and the importance of engaging with clients on their transition strategies. Alongside this utility companies in the PoC sector would come out best in these scenarios, due to higher energy demand, and their performance will depend on their starting cost structure and starting technology mix.

Physical risks are the main drivers in the 4 degrees scenario, where output here showed very limited increases in the probability of default across the three sectors; noting, however, that the sample sectors consisted only of large multinational companies with diversified manufacturing footprints, meaning they potentially have a better capacity to absorb physical risks. We are well aware, however, that physical risks can have much more dramatic consequences for our retail and SME clients, among others, and that the frequency of events will increase even further after the horizon of 2050 used in the exercise.

Transport and logistics sample companies were the second most impacted with revenue decreases and an even stronger decline in profitability, particularly in the Disorderly 2 degree scenario. Metals and mining sample companies would follow a similar path.

The exercise has helped us to further build awareness and engagement within our organisation on climate change scenario analysis, particularly across the key departments involved from business front office and risk management for the sectors in scope and from our stress testing team. In addition, we have dedicated output debriefing sessions with members of our Management Board, and senior management across risk, sectors and from our largest countries.

As we reflect on the key learnings and insights from the exercise, we must now consider how to use these more widely in the business. This is likely to include strengthening our strategy, risk appetite, and portfolio analysis. Most importantly, as our approach develops, these insights can reinforce dialogue with our clients about climate change and create more opportunities to finance our clients' climate transition strategies.

Governance

Since our last report, we have established our climate risk road map as a formalised programme under ING's global oversight of regulatory programmes. A dedicated team has been established at head office level that is managed by a Sponsor Board of senior managers from front office, risk management and global sustainability that meets fortnightly.

This Sponsor Board has a direct connection to the climate governance structure described in the overview Governance sector, with representatives present in the Climate Expert Group, and Climate Change Committee. The CCC is co-chaired by the global CRO and the Board Member responsible for Wholesale Banking, with other Board Members and Senior Managers present, and meets bi-monthly for an update.

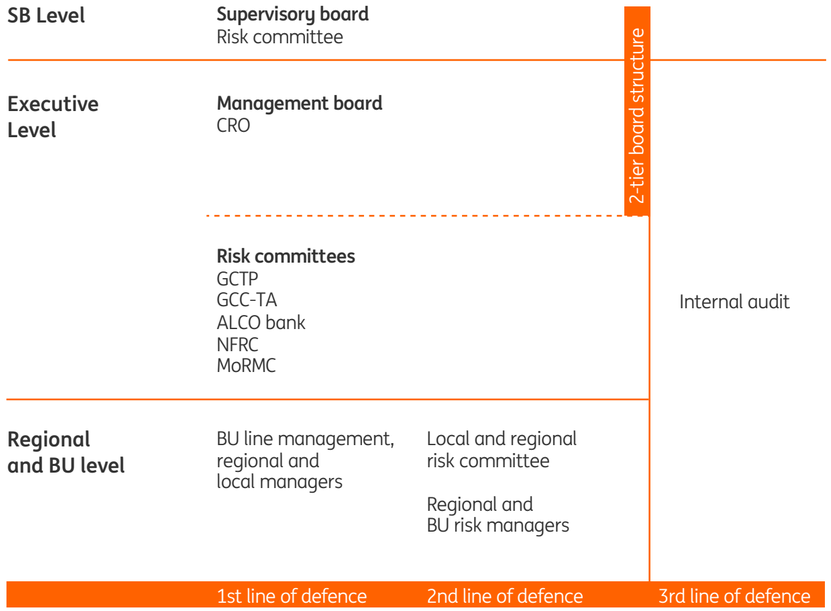
The dedicated team coordinates and executes the road map that is based on the ECB Guidance that was issued in 2020. This team is supported by a growing working group and workstreams with experts from all relevant business lines and group departments. Engagement with this network has enabled us to reach more granular levels of integration in the organisation, to distribute roles and responsibilities to the colleagues involved in our climate risk approach. These roles are being progressively defined at business line and country level, where sustainability (including climate risk) bodies are being established. While head office drives the initiative for consistency, various stakeholders from country teams are involved and leading on developing the approach locally.

As part of this process of integration, we have hosted several internal conferences and training presentations to targeted groups in the three lines of defence, including front office, financial risk and audit functions. To date, more than 450 employees have joined these dedicated climate risk sessions.

Important to highlight is that, in alignment to expectation 5.6 of the ECB Climate and Environmental risk guide, ING Corporate Audit Services considers in relevant audits the extent to how ING is equipped to manage climate-related and environmental risks. The results of these audits will be used to continually improve our governance and reporting.

Effective climate risk management requires integration into company-wide risk governance. Therefore, in addition to the Climate Risk Sponsor Board, and the Climate Change Committee, climate risk is also increasingly overseen by relevant risk management committees. From a credit risk perspective, climate change is being discussed within the Global Credit & Trading Policy Committee (GCTP) and the Global Credit Committee – Transaction Approval (GCC-TA). Both the GCTP and GCC-TA risk committees include ING's CRO, CFO and Head of Wholesale Banking. The following diagram shows the structure of our risk committees through which climate risk is increasingly integrated:

Figure 4 Risk governance



Risk & Business Strategy

Our process to embed climate risk into our risk and business strategy follows a three-step approach.

- Firstly we take stock of the policies and processes which need to be updated for climate risk considerations;
- Secondly, we use our qualitative assessment of climate risk impact to inform our strategy and risk appetite for the various portfolios using our qualitative assessment of climate risk impact; and
- Third, as quantification methodologies progress, we will increasingly adopt a more quantitative approach to inform our strategy and climate risk appetite.

We have seen and expect more iterations between steps two and three based on our growing understanding and capacity to measure the various climate risk factors. We also see that step two and step three are in turn likely to trigger more updates of our policies and procedures, thereby creating a cyclical process.

To accelerate climate risk embedding in our organisation and to tap on the experience and knowledge acquired so far, we have designated two of our Wholesale Banking sectors to pilot the approach: the Energy Sector team and the Transport & Logisitics team. These two sector teams and portfolios started analysing and integrating climate risks into their business and risk management practices several years ago. The experience from these two pilots will be carried forward as the approach is rolled out in the remaining Wholesale Banking sectors and Retail Banking.

Updating policies and processes

In the context of embedding climate risk into ING's practices, we have established an inventory of global policies at group level requiring updates for climate risk considerations. These policies are linked to ING's Risk Appetite Framework and address risk ratings, credit risk mitigation, credit assessment & review, market & liquidity risk. So far 60% of the global policy updates have been completed and we expect the remaining 40% to be updated soon. These policies will be further updated as disclosures evolve. In parallel we are creating an inventory of all policies and procedures at country or regional level, which must be updated for climate risk considerations.

Informing strategy and risk appetite

For defined sectors and products, ING policy requires an internal strategy and risk appetite paper which is a detailed analysis of the defined sector or product, and which describes the market, the risks and mitigating factors as well as ING's defined strategy and credit risk appetite. The policy ruling these strategy and risk appetite papers has been updated as part of ING's implementation of the EBA Guidelines on Loan Origination and Monitoring, including by addressing climate-related and environmental risks, which is a mandatory element and which includes how both physical and transition risks impact the financial performance of borrowers in the portfolio.

Energy and transport & logistics, our piloting sectors, have already updated their strategy and risk appetite papers to reflect climate risks. Other Wholesale Banking sectors & products are working on updating their papers and it is expected that most sectors will have updated their papers soon.

Quantitative assessment

We continue to work on the process for setting of climate-related exposure limits at the various levels of business lines, business sectors, products and countries. Our elaborated heatmaps, which, as mentioned earlier, resulted from intensive collaboration between front office and risk colleagues, will be one of the identification tools to inform our core processes for limit-setting. This exposure limit process will become more sophisticated with our growing understanding and ability to quantify climate risk.

Reporting

Establishing our data management strategy

Data analytics is required at all the stages of the risk management framework as it supports the identification and assessment of climate-related and environmental risks. As data supports multiple purposes, ING has organized a dedicated data workstream to identify the critical data points and ensure consistency and efficiency in data management across related programs for stress testing (including the upcoming ECB climate risk stress test) and external disclosure under the new and revised taxonomies for Pillar III. ING's global data management and operations expertise is represented in this workstream, together with representation from global initiatives, the risk functions and front office.

Environmental & Social Risk Framework

We use our ESR Framework to help identify and assess climate-related and environmental risks and impacts. Indeed, climate-related restrictions in our ESR policy limit our exposure in certain sectors: reduced appetite for unconventional fossil fuels (arctic offshore oil and gas, tar sands, shale gas) and for project finance we also apply the International Finance Corporation's performance standards and the Equator Principles, which includes a climate change risk assessment.

The primary responsibility for the application of the ESR Framework lies with Front Office (FO). 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 the client and transaction ESR assessments, the FO will help determine compliance with the applicable ESR sector policies and work with the credit risk managers and ESR team, who act as a second line of defence, to assess and mitigate such risks to be within our risk appetite.

Through regular updates we ensure inclusion of our own increasingly strong commitments on topics such as climate change, including:

- In 2019 we released our updated ESR Framework, ensuring that each sector policy included the proper references to the relevant standards of the human rights and climate change overarching pillars. Incorporating these has helped us to determine which transactions require further analysis and action, and provides our stakeholders with a better understanding of our approach to climate change when assessing transactions.
- In 2020, we made further updates to reflect the latest version of the Equator Principles (EP4), which contains new and stronger commitments on climate change and biodiversity, as well as an increased scope.
- In 2021, we have updated the ESR Framework to cover climate-related and environmental risks. Other bank credit risk policies are also being updated to reflect regulatory requirements on climate change risk, for instance taking into account the double materiality stance, i.e. how an asset or client that ING would finance is impacted by climate change (financial impact for ING) and how the asset or client is contributing to climate change (environmental impact). The ESR policy has been updated to reflect the developments in our regulatory framework, including high level alignment with ECB and EBA requirements and definitions. The policy now also reflects our internal developments on climate risk, specifically how environmental, climate and social risks, governed internally by our ESR framework, are connected to potential financial risks, governed by our internal Credit Risk Management policies. Additionally, the policy includes a reference to our climate and environmental risk heat maps.

As the methodologies to identify and quantify climate-related and environmental risks are developing, the industry-wide data standards are also developing and diverse. We are reviewing the offerings of external data vendors to identify those that are considered to be the market standard and that maximize the coverage of ING's product scope and geographical footprint, balanced with our exposure to climate-related and environmental risks. This, together with a structured approach to data gathering via ING's own channels helps us organize data management of climate-related and environmental risks in an efficient and balanced way.

Climate-related and environmental disclosures

Ultimately, climate-related data is used for both our internal risk reporting as well as for external disclosures in conformity with the standards such as the EC NFRD, the upcoming extension with climate risk data of the Pillar III, and TCFD. ING has reported on climate and environmental matters for many years. Since 2017, we have also 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. An overview of how these initiatives are linked to the TCFD recommendations can be found in the appendix of this report. We continue to develop our approach to climate related and environmental disclosures as we build our approach to quantifying such risks.

Next steps

The remaining part of 2021 and the years to come will see a growing focus on the risks stemming from climate change. We expect this to be the case not only for the financial services industry and its regulators, but also for our clients from private individuals and home owners to SMEs and corporates, through to sovereigns, and other financial institutions. While we have made good progress in embedding climate risk in the organisation, we still have steps to make, which will include:

- Further strengthen the risk identification process by finalizing the heat maps for Mid-Corporates and SME clients and a regular refinement of heat maps at the country level.
- Support the quantitative and qualitative understanding of client exposure to climate risk by including questionnaires on climate risk in the strategic dialogue with clients.
- Enhance our analytics capabilities through sourcing of data from external vendors.
- Finalize the strategy and risk appetite papers for sectors and products. This includes completing the data-driven risk assessment of the mortgage portfolio as a key instrument (together with the heat maps) to inform risk appetite. The end result will be the introduction of climate risk informed exposure limits for both Wholesale Banking and Retail Banking.
- Continue to establish climate risk roles and responsibilities at more granular levels in the organisation. For example at the country level to ensure the oversight provided by our Climate Change Committee is rolled out efficiently. Furthermore ensure adequate KPIs and KRIs are progressively defined and cascaded alongside these roles.
- Accelerate our work on climate risk data analytics to feed risk identification, risk management and reporting for both internal and external reports in accordance with reporting standards.

Zoom in: Biodiversity and climate change

Loss of biodiversity is among the top global risks to society[18] , posing a danger to both human wellbeing as well as economic prosperity. The link between biodiversity and climate change is well established.

On the one hand, climate change is a main driver of biodiversity loss, as rising temperatures affect ecosystems and the ability of species to adapt. On the other hand, through the natural ecosystems it supports, biodiversity makes substantial contributions to climate-change mitigation and adaptation. Nature-based solutions can contribute as much as 37%[19] of the critical solutions to climate change – including protecting and restoring forests and wetlands and managing agriculture and grasslands well.

All businesses interact with nature in some way, and many businesses count on the services that nature provides. To support a mutually beneficial relationship, we therefore need to manage risks related to biodiversity loss and help clients find opportunities to do business in a way that's in harmony with nature. That's why ING has established a proprietary approach to biodiversity, including several priority areas that link to our Integrated Climate approach.

Biodiversity risks and climate risks are managed together via our Environmental and Social Risk (ESR) policy framework. To avoid negative impacts on high-value ecosystems, we do not finance projects with direct impacts on UNESCO heritage sites, Ramsar wetland sites or critical natural habitats registered by the International Union for the Conservation of Nature (IUCN) Category I and II (strict nature reserves, wilderness areas and national parks). In addition, through our Climate Risk Initiative we are developing a comprehensive risk management approach in line with ECB expectations. Understanding the impact of biodiversity-related risks and integrating these risks into our operations are among the objectives of this approach.

ING also helps clients become a driver for positive change and sees biodiversity as an evolving business opportunity. Our sustainability-linked loan rewards clients for their sustainability performance, bringing positive change for nature and ecosystems, but also for climate. With these products and services, we look for opportunities for positive impact.

ING continues to advance our understanding of biodiversity and how to best manage both negative and positive impacts. We are an active member of the finance workstream of the EU Business@Biodiversity platform, and we're a part of the Taskforce Nature Related Financial Disclosures (TNFD) network. We are pleased to actively contribute to the journey of the financial industry to understand its impact on nature and the way financial activities can contribute to the protection and restoration of biodiversity and ecosystems.

Case study

ING worked with Royal Friesland Campina (RFC), one of the world's largest dairy cooperatives in a transaction that is promoting both biodiversity and climate outcomes. In March 2021, ING acted as sole lender and sustainability advisor to RFC on €300 mn sustainability-linked loan. In the transaction RFC committed to reducing the greenhouse gas emissions and to making it easier to trace raw materials such as palm oil, soy and cocoa.

Improved traceability of raw materials is a vital building block in any biodiversity approach. Within the value chain of these products there are potential risks of deforestation or other forms of land conversion that have a negative impact on biodiversity. Improved traceability is a first step to reduce pressures on nature throughout the value chains. A reduction of greenhouse gas emissions mitigates climate change and therefore also benefits nature.

18 World Economic Forum (2021, January 19). The Global Risks Report 2021 https://www.weforum.org/reports/the-global-risks-report-2021
19 https://www.nature.org/en-us/what-we-do/our-insights/perspectives/natural-climate-solutions/

Sector updates

Energy

Energy

The major sources of global GHG emissions are fossil fuel production and combustion. The combustion of coal, oil and natural gas represents 89% of global CO_2 emissions with respective shares[20] of 39%, 31% and 18%. Bringing continued global warming to a halt will require a massive reduction in the current high levels of fossil fuel-related GHG emissions. This can be achieved through rapid transition to other low-carbon and renewable sources of energy, improvement in energy efficiency and development of carbon capture and storage capabilities.

ING's energy sector covers clients in conventional and renewable power generation, transport and storage and in activities along the oil and gas value chain. While addressing traditional sources of energy (both electrons and molecules) this approach enables us to work with our clients to realise new technologies and market opportunities driven by energy transition.

Our client base is diverse: with a geographical presence ranging from global to local, full integration across the value chain to dedication to a specific niche, and ownership varying from state-owned to family-owned.

"The global energy system is the main cause of climate change through the greenhouse gas emissions it produces but it also offers the main means to combat climate change and for the future sustainable development of the global economy. At ING, we remain committed to supporting the Energy Transition, and to engaging with clients as they build the business models of a net zero economy. We prioritise an inclusive approach to ensure that all stakeholders move forward together, thereby creating impact in the real economy."

– Michiel de Haan, global head of Energy Sector, ING Bank

20 PBL Netherlands Environmental Assessment Agency, 'Trends in global CO_2 and total GHG emissions: 2020 report'.

Organisationally the Energy Sector team operates globally through four sub-sector business units: Renewables & Power, Utilities, Upstream Oil & Gas, and Mid- & Downstream Oil & Gas. In addition the energy project advisory team is active in all the sub-sectors. The energy sector-led, multi-disciplinary, New Energy Technologies centre of expertise bring focus and resources to areas of new opportunity, such as hydrogen, energy storage and carbon capture and storage.

The post-pandemic economic recovery, in combination with a growing momentum to act on climate change, is driving emissions reduction commitments as well as investment ambitions from companies across the energy system. We observe that for effectively every client anywhere in the world, the question of how to make their business climate-resilient, and plan for energy transition, has become the number one topic. ING's Energy Sector team is well-positioned to advise, support, and fund our clients on their journey to a low-carbon future.

Sector outlook

The future of the global energy system will be set in the context of the energy transition from fossil fuels to sustainable sources of power and heat, and increasing demand from a growing population[21] driven largely by developing and emerging economies. This latter factor also contributing to society's efforts to achieve access to affordable, reliable, sustainable and modern energy for all under the Sustainable Development Goals (SDGs).

For society to achieve the SDGs and reach net zero emissions by 2050 an unprecedented scale and pace of transition, supported by technology development and innovation will be required. There are many different pathways and scenarios which point the way to net zero success, but a strong common link between them is the need for substantial progress to be made within the next decade.

> *"The world has a viable pathway to building a global energy sector with net-zero emissions in 2050, but it is narrow and requires an unprecedented transformation of how energy is produced, transported and used globally".*
> ('Net Zero by 2050: A Roadmap for the Global Energy Sector', IEA 2021).

Electrification

The electrification of the economy powered by renewable energy will see a declining role for fossil fuels, most notably coal. This will have the most significant effect on reducing carbon emissions. The pace of coal phase-out will hasten as renewable alternatives (mainly solar and wind) become more cost competitive. Electrification of road transport, combined with increasing energy efficiency measures, will be the main decider of how quickly global oil demand reduces in the coming years.

Demand for natural gas, as the least environmentally damaging fossil fuel for power generation, will continue for as long as the future growth in demand for electricity outpaces the growth in renewable power supply.

Technology development and innovation

The effective transition to a renewables-based electricity system requires not only the scaling up of power generation, but also investment to optimise efficient delivery from

21 UN World population projections 2021.

a wider range of sources and to address intermittency of supply. New and different technologies will be applied to transmission networks, including energy storage, demand-response management and better integration with consumers (EV charging and 'behind the meter' power generation).

For some energy-intensive sectors in the economy (e.g. long-distance and heavy transport, steel, cement and chemicals manufacture) a switch to electricity powered by renewables is not yet commercially or technically feasible and emissions remain hard to abate. The decarbonisation of these sectors will require costly structural transformation through greater energy efficiency, the use of cleaner, low-carbon or renewable sources of energy, and carbon removal. Technologies to support greater use of hydrogen and bioenergy, and the application of carbon capture and storage have been developed, but are not yet deployed at scale. Investment in these technologies, combined with research and development for those yet to be identified, will be crucial to net zero emissions success.

Energy transition is everyone's responsibility

It is clear that companies in the energy sector alone cannot drive the energy transition at the pace and scale required by a commitment to net zero emissions by 2050. Strong policy support from governments will be needed to provide confidence to those companies making large-scale and long-term investment decisions. Change on the demand side of energy, not only by companies, but by individual consumers, by adjusting expectations and adopting new habits, will be a crucial driver. Most relevant for ING and our clients is the fundamental role that the financial sector will have to play in mobilising the flow of funds required for the decarbonisation of continuing operations, development of products and services for new markets, and massive investment in new energy technologies.

Steering our portfolio

The Terra approach enables us to measure and steer alignment of the lending portfolio with the Paris Agreement goals. The two PACTA methodology 'sector activities' in scope for the Energy Sector are power generation and fossil fuels.

Net zero emissions by 2050

In May 2021 the IEA published a special report: Net Zero by 2050: a roadmap for the Global energy Sector based on a net zero emissions by 2050 (NZE2050) scenario. The IEA's Sustainable Development Scenario (SDS) reaches net zero emissions by 2070 and so the decarbonisation/ energy transition trajectory in NZE2050 requires a greater pace and scale of change by the energy sector, particularly in the near-term.

Following the IEA special report, ING changed the reference trajectory in the application of the scenarios for power generation and fossil fuels from the SDS (well below 2°C) to the NZE2050 (1.5°C). In this context, we are also bringing our portfolio financing trend target forward. We are setting a short-term absolute reduction target of -12% by 2025 compared to 2019, aligned with the NZE2050 scenario, for our upstream oil & gas portfolio. ING took these important decisions as an important step towards net zero by 2050.

At the same time, ING recently also joined the Net Zero Banking Alliance (NZBA). The NZBA Guidelines for climate target-setting require banks to set targets based on

absolute emissions and/or sector-specific emissions intensity for all sectors in scope. Once credible and well-recognised data sources for measuring emission intensity for the oil & gas sector are available to support NZBA target-setting, we will use and adapt our Terra methodology toolbox accordingly.

Power generation

For power generation the alignment metric is 'Emissions intensity (kg CO_2e / MWh)'. The portfolio is measured using asset-level data from the PACTA tool and compared against the emissions intensity of global and OECD power generation set out in the selected reference scenario.

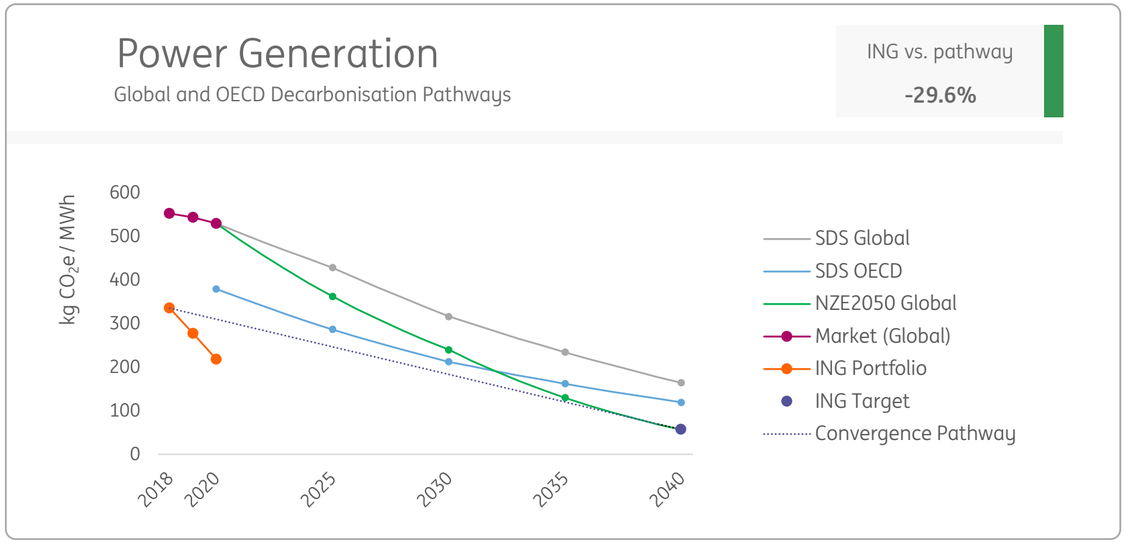
With the change to NZE2050 as the reference scenario for the energy sector, the long-term goal for emissions intensity reduction in power generation is greatly lowered compared with the SDS. The graph in Figure 5 sets out the transition pathways for the SDS Global, SDS OECD (our previous reference) and the new NZE2050 scenarios.

Currently only a global pathway is available in the NZE2050 scenario. As soon as an NZE2050 OECD pathway is published we will adopt that as our reference. In addition it is noted that the emissions intensity of ING's power generation portfolio is well below the SDS OECD and NZE2050 (global) requirements: 43% and 59% respectively.

The average portfolio emissions intensity of the power generation portfolio has been steadily declining in recent years. This is due to the concentration of our efforts to support clients investing in renewables and our 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.

Power generation	
Outstandings in scope	€7.3 billion

Figure 5 Power Generation Decarbonisation Pathway

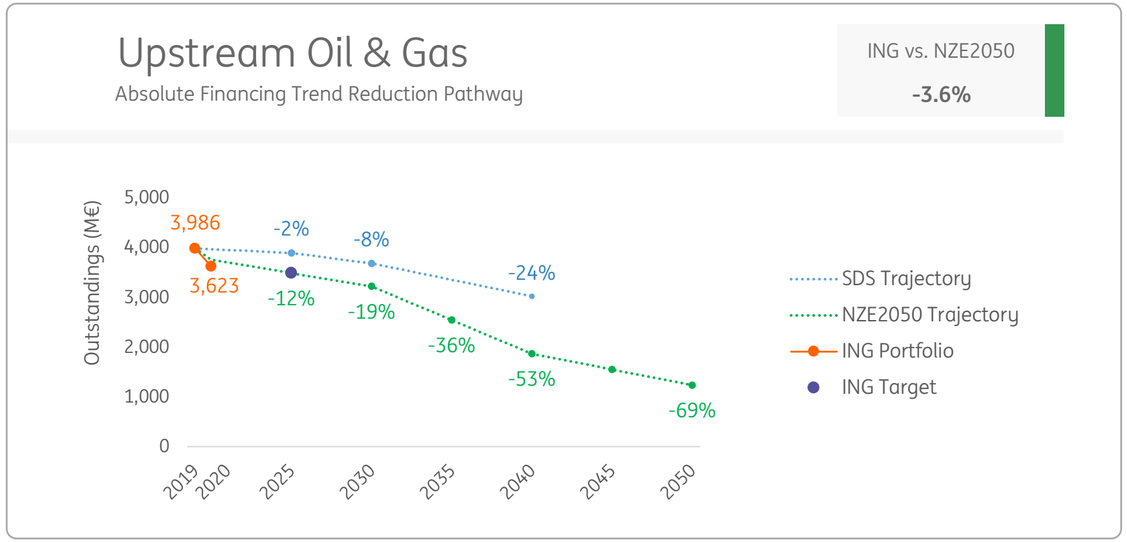


The continuing outperformance of the power generation portfolio against the IEA transition pathways, and the power market as a whole, illustrates our commitment towards the decarbonisation goals. This performance was actively driven in engagement and financing with our clients in this sub-sector. The size of the power generation portfolio has reduced slightly compared to YE2019, due regular amortisations in the portfolio, active distribution of originated assets in line with ING's capital optimisation strategy and the economic impact of the coronavirus pandemic during 2020.

Upstream oil & gas

Upstream oil & gas	
Outstandings in scope	€3.6 billion

Figure 6 Upstream Oil & Gas Financing Reduction Pathway



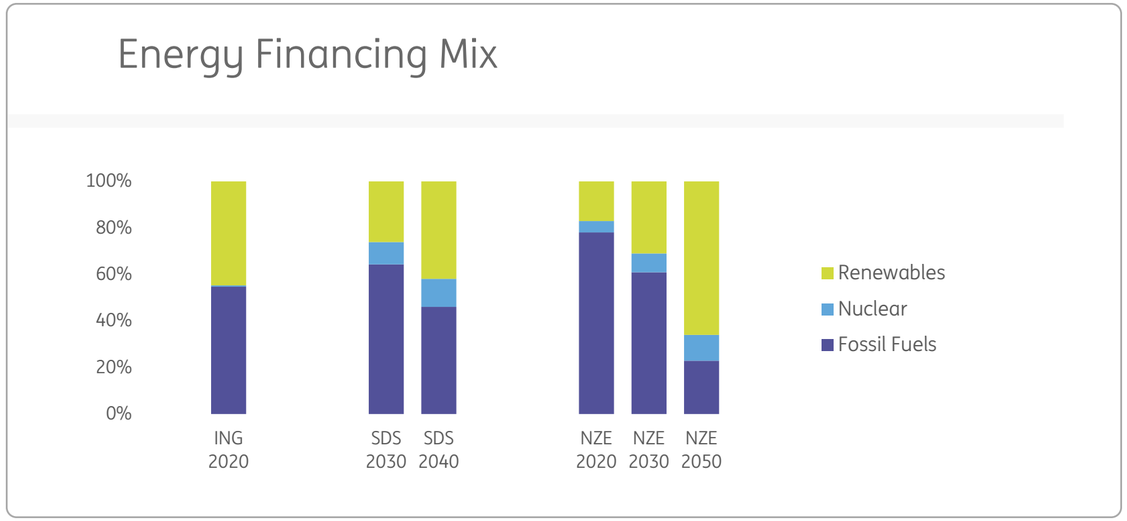
For fossil fuels the alignment metric is the 'Portfolio financing trend', which requires an absolute reduction in the size of the upstream oil & gas and thermal coal mining portfolios. In PACTA's methodology, the alignment of the fossil fuels sector is measured by an analysis of the upstream oil & gas and thermal coal mining segments, as alignment here will have a knock-on effect throughout the rest of the value chain. Emissions resulting from the consumption of fossil fuels are covered in the scope of methodologies for other sectors (e.g. power generation, cement, steel, automotive, aviation, shipping).

PACTA's methodology recommends that a widely accepted science-based decarbonisation / energy transition scenario should be used as the reference trajectory. In our first report on the alignment of the upstream oil & gas portfolio with the changing future global energy mix, the selected reference trajectory was the IEA's SDS, published in 2019. In making this selection we acknowledged that if future updates to the SDS would require a greater decline in oil & gas production in the global energy mix, at a faster rate, the new scenario would guide the direction that ING will take.

With the adoption of the NZE2050 scenario, a new target has been set for 2025 to reduce the upstream oil & gas portfolio by 12% from the 2019 baseline.

Energy Financing Mix

Figure 7 Energy Financing Mix



For the first time this year, and in alignment with our commitment shared in our 2020 Terra Progress Report, we have included a new metric to our energy reporting. The 'energy financing mix' provides an overview of combined primary and secondary energy production, for overall Energy Sector steering rather than target setting purposes. The metric combines the PACTA power generation and fossil fuels portfolios and presents the relative weighting of finance for energy production from fossil fuels to renewable energy, as described by the Credit Portfolio Alignment: An application of the PACTA methodology by Katowice Banks in partnership with the 2 Degrees Investing Initiative.

The reference is the current and future Total Primary Energy Demand (TPED) assumptions of the SDS and NZE2050 scenarios. ING compares well with both the SDS and NZE2050 out to 2030, but the need for a significantly greater shift towards renewables after 2030 is underlined, particularly for achieving net zero emissions by 2050.

Advising and financing our clients

Fielding teams of specialists to cover the product and service needs of our clients in economically important sectors has been a distinguishing strength of ING for many years. Many of the Energy Sector team's client relationships in the Renewables & Power, Utilities and Oil & Gas sub-sectors span decades. The institutional knowledge and skills we have developed together with our clients, through funding continuing operational requirements and future investment needs – in a risk environment characterised by change and constant technological development, equips us well to provide advice and finance for the energy transition and climate and environmental challenges ahead[22].

Renewables & power

Renewables & power sits at the heart of energy transition, supporting decarbonisation and electrification. ING is one of the top 10 European banks for renewables projects. The team works with ING's clients within and outside the energy sector, including project developers, utilities, international oil companies, infrastructure investors and stand-alone project investors. The focus is on core technologies (solar, on/offshore wind and, selectively, geothermal), and a growing segment is battery storage and manufacturing and storage and ancillary services such as grid support. At year-

22 For insights from ING Sector Research on the energy sector see https://think.ing.com/sector/energy/

end 2020 ING's renewables portfolio was €5.74 billion, a reduction from €6.11 billion in 2019. The slight reduction reflected regular amortisations in the portfolio, active distribution of originated assets in line with ING's capital optimisation strategy, and the slowdown in new investment due to the coronvirus pandemic.

As an example of our financing in this area, ING was the lead lender and mandated lead arranger in the $1.6bn non-recourse debt financing of Northvolt Ett AB, Europe's first homegrown 'Gigafactory' in Sweden. Using hydro-generated power and maximising the recycled content of the batteries, Northvolt has set itself the goal of producing the world's most sustainable batteries and become the European leader in battery production by 2030. Once operational, the factory will produce 16 GWh of lithium-ion batteries per year, which will be used to power the premium electrical vehicles from original equipment manufactuers (OEMs) Volkswagen and BMW among others.

In another example, ING acted as mandated lead arranger in the €570m financing of Arcadis Ost 1, a 257 MW offshore wind farm that will be constructed in the Baltic Sea off the coast of Germany. The project is the first foray outside of Belgium of majority owner Parkwind, where it has previously successfully developed four offshore wind farms. The project will be using the latest Vestas V174-9.5MW wind turbines and will be installed by Heerema using a floating installation vessel, an industry-first.

Moreover, ING acted as financial adviser in Enpal's most significant financing round to date, which has allowed the company to secure senior debt funding of €275 million and mezzanine debt funding of €70 million from a diverse group of lenders. Founded in 2017, the company has installed more than 7,500 solar PV systems and is already the largest provider of solar solutions for homeowners in Germany. Enpal offers its customers hassle-free access to green energy produced from their own rooftops, with the added benefit of long-term savings on their electricity bill. This new financing round allows Enpal to significantly increase the number of customers and expand its product offering to include energy storage. ING and Enpal successfully collaborated to achieve an innovative and highly tailored financing structure, reflecting the innovative nature of Enpal's business model.

Finally, ING acted as sole underwriter, mandated lead arranger and deal contingent hedge provider for Cleantech Solar's US$75m non-recourse financing for a distributed solar PV generation business, the largest of its kind in Asia Pacific. Cleantech Solar is one of the largest commercial and industrial (C&I) distributed solar PV developer in the region with operations spanning Southeast Asia and India. The distributed C&I solar PV segment is expected to grow exponentially as more companies look to procure 'green' power on their own facilities and solar PV solutions become more economically viable. Given the distributed nature of over 50 individual sites, diverse C&I customer profiles, varying regulations across each Southeast Asian country, ING developed a bespoke, structured solution that was able to finance Cleantech Solar's portfolio of operating and growth projects.

Utilities

Our Utilities Sector team coverage encompasses activities throughout the value chain (generation, transmission & distribution, trading, marketing & sales of electricity as well as related technology and energy services) and clients range from large state-

owned vertically integrated companies to specialist players (state and private) who have emerged from extensive restructuring and privatisation within the sector. Through these corporate relationships, we offer a full range of banking products. Disruption in energy markets due to regulatory change and energy transition is driving utilities to consider new strategies. We strive to build on the senior-level relationships with our clients, supplemented by our leadership in renewables and our New Energy Technologies Centre of Expertise to become their partner of choice in matters of energy transition and sustainable finance products.

ING acted as active bookrunner on TenneT's largest ever (€1.8bn) green eurobond transaction and first green triple tranche. The transaction is issued under TenneT's Green Financing Framework dated March 2021. TenneT is the monopoly electricity transmission system operator (TSO) in the Netherlands and the largest TSO in Germany. Tennet is a top-3 corporate issuer of sustainable, green debt financing in Europe, with currently over €12 bn of green debt issued across different debt formats. Proceeds will be used to invest in eligible green power transmission projects in the Netherlands and Germany focused on the connecting large-scale offshore wind farms to the onshore electricity grid and enhancing the onshore transmission capacity for renewable energy.

Oil & Gas

ING's oil & gas finance business is characterised by the diversity of our clients. Their geographical footprint ranges from global to local; their position in the value chain ranges from fully integrated across the upstream, midstream and downstream segments to pure-play companies in each segment; and their ownership varies from state to public to private. A common factor for all of these clients is the prospect of declining global demand for oil & gas, combined with a growing societal demand for greater environmental responsibility. ING's climate and environment strategy for the Oil & Gas subsector team is one of engagement with those clients who demonstrate commitment to adapt their business models to the requirements of successful energy transition and to improve the ESG performance of continuing operations. We see growing demand from clients for sustainability related advisory and financing solutions. A particular development over the past two years has been loan structures which incorporate a margin incentive or penalty for performance against ambitious ESG goals (tailor-made to align with the client's strategy). KPIs include GHG emissions reduction (notably CH4 as well as CO_2), electrification of operations, heat re-utilisation, investment in renewables and reduced water consumption.

As an example of our financing in this area ING acted as mandated lead arranger and bookrunner for Lundin Energy AB in the refinancing of their $5.0bn secured Reserve Based Lending facility into an unsecured $5.0bn mix of term loans and a multi-currency revolving credit facility. Lundin is a Norwegian upstream oil & gas company listed on the Stockholm Stock Exchange with a market cap of around $9bn and is a global leader in terms of its sustainability targets, including the aim to become net zero from 2025 across its operations (scope 1 and 2 emissions, and scope 3 supply chain emissions). Lundin included specific carbon footprint reduction and renewable energy usage targets into its RCF aligning financial benefits with its strategy to further decrease its already leading scope 1 & 2 emissions of around 3kg of CO_2/barrel (compared to global average of around 16kg). ING also supported Lundin as Global Coordinator and active bookrunner in their inaugural $2bn bond issue.

In another example, ING coordinated the green structuring process among the issuer's banks and was a book runner on the inaugural green bond for PKN Orlen, an energy company mainly active in central and eastern Europe and one of the largest publicly traded companies in the region. The green bond only finances green assets, including those related to renewable energy generation, electrical vehicle charging infrastructure, hydrogen fuelling stations and waste management and recycling. To support its green bond issuance, ING encouraged PKN Orlen to increase transparency and accountability with regard to its strategy to transition to a low-carbon business model based on a multi-utility approach, especially through commitments to publish scope 3 GHG data and to set targets for reducing its scope 3 GHG emissions.

Finally, ING acted as sole financial adviser in relation to Porthos, a company developing a CO_2 infrastructure system near the Port of Rotterdam which, upon completion, will transport and store CO_2 in offshore depleted gas fields in the North Sea. Porthos is a joint venture between Port of Rotterdam, Gasunie and EBN and aims to contribute to reducing CO_2 emissions in the Netherlands as well as play an active role in the energy transition. Porthos is the largest planned CCUS project in the Netherlands and can therefore be considered of strategic importance for the Dutch government's energy transition plans. The fact that European Parliament has approved the Project's status as a 'Project of Common Interest' further underscores its importance at a European level.

New Energy Technologies

The great challenge for the coming decades, for society, is to meet the growing global demand for energy and simultaneously reduce GHG emissions. With ING's commitment to steer alignment of its lending portfolio with net zero goals, New Energy Technologies was established as an intermediate strategy to harness the opportunities of innovation and better manage the risks of disruption in the energy sector. NET is an Energy Sector team-led initiative, in conjunction with other affected sectors and products, in support of our clients in the transition to a low-carbon economy, while maintaining a market-leading position in financing the energy sector. This is done through engaging, advising and thinking alongside our clients: building awareness around bankability topics, and identifying where ING can add value in realising our clients' strategies.

- **Energy storage (further split into stationary storage and EV storage)**
- **Hydrogen**
- **Carbon capture, utilisation, and storage 'CCUS'**

By selecting these technologies, three centres of expertise (CoE) have been established, comprising of multi-disciplinary teams of renewables, utilities and oil & gas specialists, supported by colleagues in related sectors, products and research. The CoE's engage with clients, policymakers and industry platforms to identify commercial opportunities and address bankability issues relating to the commercial deployment of low, zero or net zero carbon technologies.

Managing climate and environmental risks in the energy sector

The resilience of the Energy Sector business, taking into consideration climate-related and environmental risks, has been a strategic objective for many years. The following milestones have been achieved over the past five years:

- **2015/16:** Following COP21 Paris and the publication of Carbon Tracker's 'Stranded assets danger zone' report, a fossil fuels risk review was conducted. An Energy Transition Scenario Planning (ETSP) project was initiated (jointly undertaken by the Energy Sector and ING Research).
- **2017/18:** Completion and implementation of the Energy Sector ETSP Response Plan – informed by the TCFD Report recommendations (a greater understanding of physical and transition risk). The plan included changes to lending policies, such as on coal; portfolio and maturity limits for high transition risk businesses; investment in more extensive data sources; and the appointment of global lead for energy transition planning.
- **2019/20:** Participation in the oil & gas and power sector working groups of the UNEP FI Pilot Project on Implementation of TCFD Recommendations for Banks. Renewal of sector ETSP Response Plan based on updated Scenarios. Transition risk and climate alignment incorporated into the Energy Sector strategy and risk paper.
- **2020/21:** Pilot sector for ING's bank-wide climate risk initiative and development of the climate risk appetite framework (CRAF). Climate & environmental risk and alignment with climate goals placed as fundamental elements of the new Energy Sector strategy and risk paper.

Climate & environment considerations are part of our current risk appraisal process:

- **Climate transition risk** (changes in technology, policy & regulation, market demand, and carbon pricing) must be addressed in all transaction proposals and reviews. Subsectors assessed to have 'high' or 'medium' transition risk activities have developed check-lists and a scorecard to guide analysis. Portfolio concentration and maturity of financing is carefully monitored.
- **Climate physical risk** (extreme weather, fires, sea level rises, fresh water stress) assessment at asset-level is part of standard due diligence for project finance, undertaken by independent experts. At a corporate level, particularly for large companies with widespread regional or global operations, physical risk assessment is more challenging and lack of data makes this a more subjective process. However, it is noted that energy companies often outperform others in rating agency assessments for environmental risk awareness and sustainability management.
- **Environmental risk** (biodiversity, land degradation, pollution & waste, resource scarcity) is addressed by ING's ESR Framework, within which sector policies sets out restricted activities. For the energy sector these include Arctic oil & gas, tar sands, no new thermal coal-fired power generation and a commitment to reduce thermal coal-related exposure to close to zero by the end of 2025.

The contribution of subsector teams, together with our risk colleagues, to energy transition scenario planning, as well as participation in the external sector working groups of UNEP FI's TCFD pilot project, has greatly improved overall awareness of climate & environmental risk – particularly the need to go beyond transition risk. This experience has underlined the need for the more structured (data-driven & climate

scenario-based) approach to risk identification, measurement and management which we are now developing. This approach will lead to better informed strategic decision-making at portfolio, client and transaction levels.

Climate Risk Appetite Framework sector pilot 2021

As part of the ING-wide climate risk initiative, the Energy Sector has been selected to pilot the development and implementation of a climate risk appetite framework in line with the ECB 'Guide on Climate-related and Environmental Risks'.

Subsector and regional teams are trialling models, methodologies, data sourcing and the organisational practicalities of analysis and reporting under four themes:

Risk identification

Building on the groundwork of energy transition scenario response planning, we have developed a holistic climate and environmental risk heat map. This heat map addresses the sector and subsectors in the global economy and then filters down to the fit with the Energy Sector's clients and lending portfolio.

Table 4 Energy sector: subsector level outcome of climate-related and environmental risk heat mapping

Energy sub-sectors	Transition Risk	Physical & Environmental Risk
Upstream Oil & Gas	High	Low – Medium
Mid & Downstream Oil & Gas	Medium – High	Low – Medium
Renewables & Power	Low	Low
Utilities	Low	Low

The split allocations between the high, medium and low risk buckets reflects a split weighting of risk factors across a sub-sector, or a difference in severity of risk factors for different activities within a subsector. In mid & downstream oil & gas, oil-related infrastructure (refineries, pipelines, storage) has higher transition risk (e.g. stranded assets) than that for natural gas. Regarding physical and environmental risk for both oil & gas sub-sectors, the climate risk of extreme weather hazards, and the environmental risks of biodiversity loss, pollution and waste were assessed to be distinctly higher than other factors.

The heat mapping exercise proved to be an excellent way of engaging the Energy Sector transaction teams and relationship managers with climate and environmental risk:

- the framework and risk factor guidelines broadened their outlook on the range of issues involved;
- the iterative process of challenge and justification, at first within the Energy Sector and then with our counterparts in the risk department, has resulted in a deeper and common understanding of the issues.

Heat mapping is a starting point and not an end in itself. It provides the basis for a much more informed discussion on climate risk modelling, scenario analysis and ultimately the accurate quantification of climate and environmental risk with the wide range of ING departments involved in that process.

Next to the sector strategy and risk appetite, the heatmap will inform the further development of climate & environmental risk guidance and training for sector, risk and reporting teams, taking into account subsector, product and regional factors.

Governance & risk appetite

From a global perspective, board oversight is ensured through ING's Climate Change Committee, for both risk and opportunity management, stemming from climate change. The Energy Sector plays an active role to support the climate risk initiative in embedding climate risk into ING's practices.

The climate-related and environmental risk heatmap has already informed the update of the Energy Sector strategy and risk paper. Alongside this the development of metrics for the risk appetite statement framework, in line with a shift from qualitative to quantitative risk assessment. KPIs will include climate-related and environmental risk considerations.

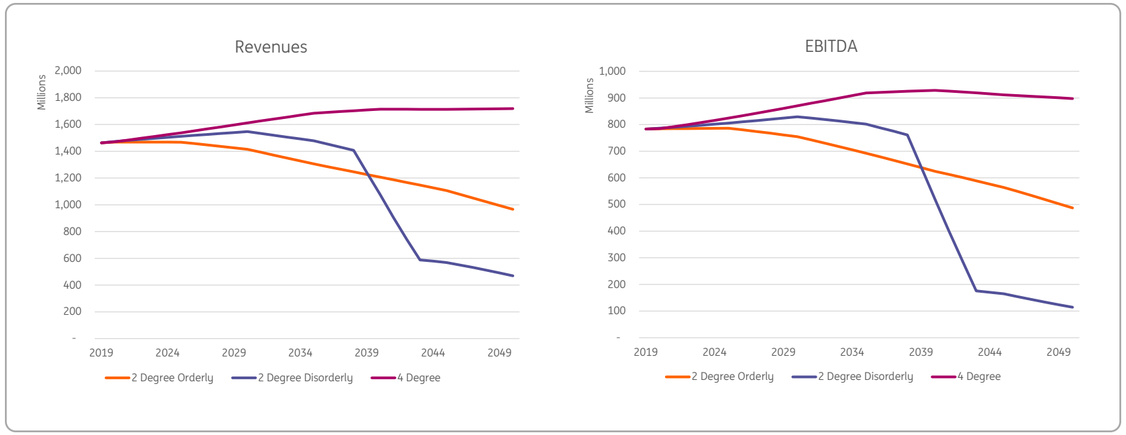
Risk management

Using the climate risk identification tools at hand, such as the heatmap, sub-sector plans include the development of risk scorecards, guidance for risk analysis in transaction proposals and more regular monitoring of medium and high risk hot spots in the portfolio. Climate and environmental risk is to be systemically incorporated into commercial and risk decision-making, through changes to proposal formats and reporting.

The Energy Sector participates in actions such as test changes to risk policy and procedures for analysis and reporting. It will also provide sector input to trials with external experts on climate methodologies and models for financial risk conversion for bank-wide portfolio scenario analysis and stress testing. The Energy Sector was one of the sectors selected to join the Baringa pilot exercise on climate change scenario analysis.

The following charts[23] display a projection of the data for an example oil & gas company in scope of the Baringa exercise. In the charts we see how revenues and EBITDA of the company would evolve until 2050, under the three climate pathway scenarios modelled in the exercise[24]. Important to note however that the model used in the exercise assumes that companies will continue according to their current energy mix. As we consider to adopt such a model for our risk measurement and scenario-analysis approach, there is a possibility to use overrides to adjust for companies which are credibly committed to net zero/transition strategies.

Figure 8 Scenario analysis pilot: example of data output



23 The graphs displayed do not reflect any one particular company or sub-sector and are for illustrative purposes only.
24 See section on Climate Risk for a description of the scenarios.

Next steps

The Energy Sector's climate and environment strategy is well underway. Over the past three years we have developed the climate alignment tools which have enabled us to steer our portfolio, broaden our understanding of the full range of climate and environment risk issues, and expand the related product and service offer to our clients. This provides a good platform for further progress. More experience will inform and refine the sector strategy and our dialogue with clients. The concentration of effort for the next phase will be on more effective operational implementation: to truly embed climate and the environment in the team's ways of thinking and working.

- The immediate priority is for a successful conclusion to the climate risk appetite framework sector pilot in 2021. Building on the heat maps and the Baringa exercise, the next challenge will be to develop metrics and data requirements for more accurate quantitative reporting.
- Our experience of raising climate and environment risk awareness among sub-sector and product specialists, to drive the 'bottom-up' development of risk guidance tools, will be carried forward in the expansion of training for the roll-out of the CRAF to other sectors.
- This year, we raised the alignment bar for the Energy Sector's Terra approach by changing the reference trajectory from the IEA's SDS to the NZE2050 scenario. Our power generation portfolio, with its strategy for continued growth in renewables, is well positioned with a current emissions intensity which is 29.6% below the NZE2050-aligned convergence pathway. In fossil fuels we are on track to achieve our ESR policy goal of close to zero coal finance by 2025. We have set a 2025 target to reduce the upstream oil & gas portfolio by 12% (from the 2019 baseline), which is far more demanding than the 2% reduction required by alignment with the SDS. The big new challenge will be to work together with peer banks to reach reporting standardization across the sector.
- The New Energy Technologies Centres of Expertise signposts the way to new energy transition opportunities. ING will continue to strive to be the partner of choice for our clients; to support them in the energy transition by capturing the relevant knowledge and providing best-in-class solutions to achieving a sustainable future. This requires us to be frontrunner in the banking sector in delivering advice (project, capital structuring and corporate finance) and debt funding to clients investing in energy storage, hydrogen and CCUS.

Zoom in: Human rights & climate change

Climate change is increasingly also understood as a threat to human rights[25], where its impacts can negatively impact health, food, water, sanitation, culture, property, development, a healthy environment and more.

ING has therefore intentionally linked the potential impacts on people and human rights within our Integrated Climate Approach. The energy transition required to achieve net zero net emissions, also entails changes in sectors such as energy, mining and manufacturing, which can have impacts for workers, consumers and communities.

A number of frameworks and reports on what human rights due diligence could look like through a climate change impact lens have been published. This includes the EU report on due diligence requirements through the supply chain, covering environmental and climate due diligence[26]. ING is now reviewing these frameworks and reports to further inform our due diligence approach. Currently, our ESR Framework guides our business practice for corporate clients, where the overarching climate and human rights policies are integrated within the ESR Framework sector policies and implementation. The deals assessed by our dedicated ESR team integrate both topics in transaction advice and this way we use leverage on both topics with clients in the most relevant way.

We also see our role in engaging and financing our clients to achieve positive change. On the engagement side we plan to continually improve our measuring and monitoring tools for human rights engagement, exploring the combination of risk data points on environmental and human rights topics, which can then help us to prioritise engagement.

On the financing side, we offer a range of sustainability products and services, including social bonds. Our sustainability-linked loan rewards clients for their sustainability performance, bringing positive change to communities and living standards. We expect this type of financing in the market to increase with the EU Social Taxonomy, where both environmental and social topics would be integrated in one framework[27]. The Social Taxonomy will further support our reporting around how financing can be used to address the connected impacts on human rights.

As we decarbonise, guidance on what a 'Just transition' is and how to incentivise it is also being developed. This could lead financial institutions to prioritise sectors for both opportunities and enhanced due diligence when considering the transition and human rights risks or opportunities for human progress. Attention to the Just Transition will also help ING clients better understand) risks, which in turn means that entire value chains take responsible action in the transition.

Case study

One example of a transaction in a transition sector which touched on the topic of human rights is a transaction that took place in early 2021 of a project refinancing for a solar farm in Latin America. The ESR Energy Sector Policy was applied to this deal, along with the overarching Climate and Human Rights ESR policies. Solar is a clean energy source but due to its location in an area of rich biodiversity and a diversity of culture the project could have been exposed to risks. The issues associated with the deal which ING focused on were land issues, critical habitats, biodiversity and Indigenous people. Through detailed analysis from our ESR team we gained comfort from elements such as: the company's track record, independent technical reports, local community views, and other details of the project such as the consultation of indigenous people who were potentially affected and the ongoing commitment to maintain a relationship with the community during the project lifecycle (according to IFC performance standard 7). Through transaction assessments such as the above, our climate and human rights policies are integrated in to individual assessments instead of the two topics taking a siloed approach.

25 https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=24956
26 https://op.europa.eu/en/publication-detail/-/publication/8ba0a8fd-4c83-11ea-b8b7-01aa75ed71a1/language-en
27 https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/finance-events-210226-presentation-social-taxonomy_en.pdf

Transport and logistics

Transport and logistics

The transport and logistics sector is pivotal for both the economy and society. It is, however, a sector with a relatively large carbon footprint and responsible for approximately 24%[28] of global emissions. The reduction of this footprint requires significant capital investments, technological developments, incentivising regulation, and sustainable leadership. More positively in this sector, many of the capital investment opportunities are predicted to provide an economic return and as such have a stand-alone business case[29]. This creates opportunities for stakeholders, investors and commercial banks such as ING to accelerate the transition.

As a result of technological developments, some of our clients are already developing or using new products with a reduced carbon footprint. This transition is especially visible in the automotive industry. In the last decade, the battery price per energy unit (kWh) has halved every three years, accelerating the development, marketing and usage of electric vehicles and related infrastructure. ING actively supports this by financing the leading industry players and also by providing advice on appropriate debt instruments, including the placement of green bonds.

"We notice that transitions across regions and across sub-sectors are moving at a different pace, however, the common denominator is that all clients are actively discussing this topic. We look positively towards the future."

– Gerlach Jacobs, global head of Transport & Logistics

28 https://www.iea.org/topics/transport
29 McKinsey Net Zero Europe Report.

At the same time, other modes of transport require considerable technological development. Our clients are actively researching and reviewing alternative fuels (e.g. solid state batteries, hydrogen, ammonia and synthetic fuels), but these technologies require time to develop, test, and implement before they become mainstream. As these technologies advance, ING continues to support best-in-class clients in shipping and aviation with transitional transactions to help them continually improve the energy efficiency of their assets, and ING monitors the emissions of the financed assets.

A strong and predictable regulatory framework underpins confidence in capital allocation and helps our clients make the correct investment choices, which is critical as aircraft, trains and ships have an economic life of several decades. Our clients in several sub-sectors will benefit from the publication of the EU Taxonomy, which sets clear and uniform standards, making things more predictable. They may also benefit from the Infrastructure Support Factor which will impact banks RWA. ING actively advises clients on compliance with such new regulation.

In addition, ING is involved in discussions and the co-development of new standards, such as the Poseidon Principles for the shipping industry, to try and continually raise the bar for best practice.

ING continues to show leadership by supporting clients across Transport & Logistics subsectors, including Container & Logistics, Land Transport, Automotive, Aviation and Shipping, where the latter three are further elaborated on within this report. In addition, ING supports strategies across sectors including road to rail, and air to rail initiatives. This has seen us support a range of transactions from acting as sustainability adviser to railcar-lessor Touax Rail in 2020, and providing a loan to high-speed rail operator Thalys. ING also structured and acted as lender for a green lease facility for public transport operator Keolis to support one of the largest zero-emission bus concessions in Europe.

Automotive

Despite the coronavirus crisis in which global vehicle sales fell by about 16%, electric vehicle sales reached a new high in 2020. Following years of strong growth at low levels, 2020 could be the year a tipping point was reached. That means that sales of new electric vehicles reached a point of no return on the pathway towards a zero-tailpipe emission vehicle fleet. Global electric vehicles sales (including plug-in hybrid vehicles) reached about three million units in 2020[30], an almost four-fold increase in the past five years. The surge in electric vehicle sales was partially backed by subsidies introduced in major markets to stimulate a post coronavirus recovery. Newly introduced models have improved in range and performance and even without subsidies, cost parity between electric and conventionally powered vehicles could be reached as the average price of traction batteries fell to $156/kWh[31]. Manufacturers across the globe have launched roll-out campaigns for a vast number of new models. These are, in comparison to previous generations of electric vehicles, purpose-built electric vehicles. The IEA expects that the current electric vehicle fleet will reduce green house gas emissions in 2030 by more than one-third in comparion to equivalent conventionally powered vehicles. However, with just 10 million electric vehicles on the world's roads in 2020 (1% share of the entire vehicle fleet) levels are still low and a swift adoption of electric vehicles is needed to reach the climate goals as road transport accounts for approximately 18.5% of global CO_2 emissions.[32]

30 https://www.iea.org/reports/global-ev-outlook-2021?mode=overview
31 https://cdn.statcdn.com/Infographic/images/normal/7713.jpeg
32 https://www.iea.org/data-and-statistics/data-product/co2-emissions-from-fuel-combustion-highlights

Our analysis of INGs Automotive Sector portfolio focuses on car and light-duty vehicle producers, known as OEMs (original equipment manufactuers), as they are the primary influencers of emissions intensity.[33] ING's portfolio includes most of the OEMs that have a global reach in terms of manufacturing and sales.

Sector outlook

The last ten years has seen the global electric vehicle stock rocket from just 17,000 vehicles in 2010 to slightly more than 10 million in 2020. Manufacturers and suppliers are therefore shifting their R&D and production towards electrified powertrains in response to the Energy Transition – especially to battery-electric vehicles. Other sustainable drivetrain and mobility options including sharing platforms to increase the utilisation of cars, micro-mobility solutions (e.g. electric scooters, bikes, etc.), and the research in hydrogen and synthetic fuels as alternative energy carriers for cars and trucks are also being explored. Most players in the industry are engaged in one, more or even all of the aforementioned R&D fields.

These positive developments are encouraging signs that the energy transition is gaining momentum in the sector. However, recent events surrounding the coronavirus pandemic could potentially slow growth of zero-emission vehicles, or present an opportunity to propel the technology further with signs of recovery policies focussing on support of efficient or zero-emission vehicles.

The global automotive sector was under pressure even before the coronavirus hit most markets across the globe. Passenger car sales fell dramatically in 2020, increasing the pressure on most automotive companies. While the decline proved to less pronounced than was feared after an even sharper first-half drop of approximately 27%, the full-year fall was much sharper than the 9% decline seen in 2008, in the wake of the global financial crisis. After such a dramatic reduction in sales volumes last year, based on ING's base case global economic recovery scenario across key regions, ING research expects that global light vehicle demand will rebound in 2021, potentially by 7% to 9%, depending on various industry forecasts[34].

It is worth noting that the rate of the coronavirus impact on auto sales has been uneven across regions and this should be the case for the anticipated rate of recovery. Western Europe and North America suffered more in 2020, with declines of 20% YoY and 16% YoY[35] respectively forecast, while China's auto sales have held up better, with a decline of 5% YoY in 2020.

Auto parts manufacturers are affected by the same dynamics as global and regional auto sales and have felt the impact from the pandamic-related drop in production and demand. ING reseach calculated a 16% drop in aggregate organic revenues of European auto parts suppliers last year, followed by a rebound of 11-12% and 9-10% in 2021 and 2022 respectively.

33 ING's automotive sector portfolio in scope represents the global light duty vehicle as well as light trucks production. Heavy duty vehicles such as semi-trucks, busses, etc are currently excluded.
34 https://think.ing.com/articles/automotive-sector-outlook-recovering-after-traumatic-2020/
35 IHS Markit.

> ING has significantly contributed to making green financing mainstream in the automotive sector, thereby supporting the transition of our clients. Together with our clients we can achieve ambitious climate goals and create real impact."
>
> – Thorsten Mehltretter, global lead Automotive Sector

The pandemic has accelerated the proliferation of new EVs. Several European countries have adopted targets for a 100% EV share in new sales for 2025, 2030 or 2035. China also has its own ambitious goals and targets, with 25% of new sales in 2025 compared with some 5% last year. As previously anticipated, factors that drive electric car sales include subsidies/tax exemptions, the decreasing total cost of ownership with the introduction of new cheaper models with attractive ranges, and regulations forcing manufacturers to reduce average emissions of new cars. Manufacturers have been shifting their innovation budgets accordingly in an attempt to keep pace with the introduction of a whole new range of vehicles in the years to come.

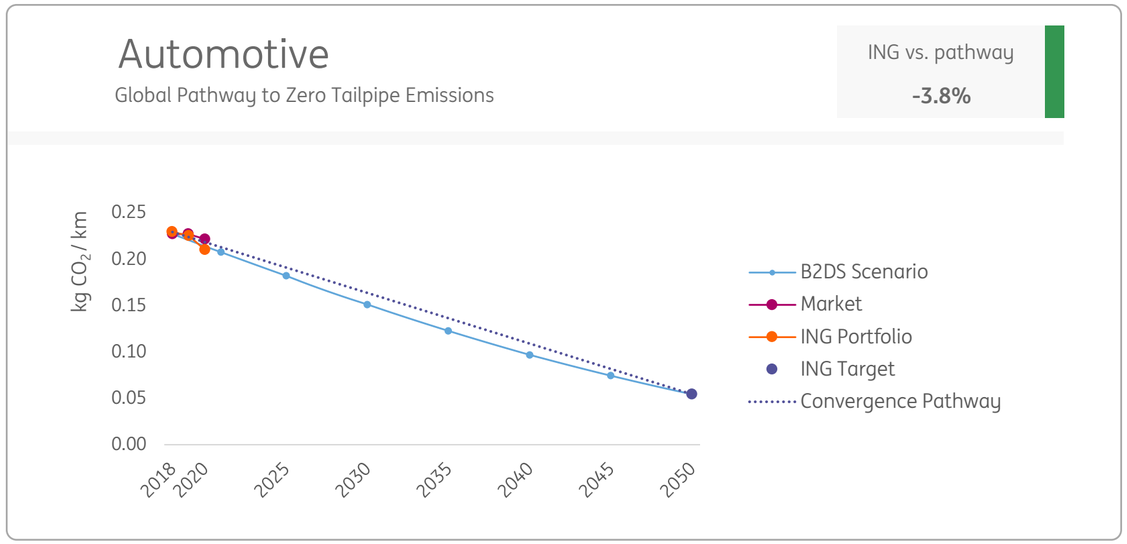
The past year has shown that the capital demand for zero-tailpipe emission vehicles is continuously growing, presenting ING and the banking sector with the opportunity to provide needed capital to boost production, infrastructure and supply chains that will usher the energy transition in this sector. The shift towards electrification is supporting those players in the industry that have been investing in recent years – even in times of crisis. To that end, ING will continue to monitor these trends, support clients whose strategies are focussed on the transition and developing sustainable finance solutions for those who need our help.

Steering our portfolio

For the Automotive Sector, Terra is a portfolio-based approach. The Terra methodology is used to assess our light-duty vehicle OEM clients based on their fleet emissions and forward-looking electrification.

Automotive	
Outstandings in scope	€2.6 billion

Figure 9 Automotive Pathway to Zero Tailpipe Emissions



In 2020, the Automotive Sector client selection criteria were altered to place greater emphasis on our clients' commitment to sustainability as well as their ability to transform (energy transition). We expect our clients to have a strategy to reach lower carbon emission in products, production, and supply chain and/or an aim to align with the Paris Agreement.

The current production capacity within our automotive portfolio reflects 86% internal combustion engines (ICE) with the remainder made up of hybrid and battery-electric vehicles (BEV)[36] Compared to last year, when 93% of our portfolio's production capacity was in ICE, we saw a shift from ICE to BEV and hybrid vehicles. Thanks to this improvement and the availability of more granular, plant-level emission factors for 2020, ING's automotive portfolio is 3.8% below the scenario benchmark.

Advising and financing our clients

In addition to engaging with our clients about their sustainability ambitions, we support them with sustainable finance products. ING is one of the leaders in providing sustainable finance structures, and in the automotive industry we have a number of first-time deals[37].

One example that will ultimately support the automotive sector's transition to zero-tailpipe emission vehicles is the Green Bond for Volkswagen's Green Finance Framework. ING acted as the sole green structuring advisor to the process, which resulted in an

36 Fuel cell production is currently too small but may be revisited over time as and when it scales up.
37 For insights from ING Sector Research on the automotive sector see https://think.ing.com/sector/logistics-automotive/

€8.9bn bond. The Volkswagen Group is Europe's largest car manufacturer, and plans to increase the proportion of electric vehicles in their fleet to at least 40% by 2030. To achieve its targets, the Volkswagen Group is implementing a comprehensive and holistic decarbonisation programme, which includes the whole life cycle of the vehicles. The proceeds will be used to finance or re-finance, in part or in full, new or existing green projects, such as the manufacturing of electric vehicles, development of Modular Electrification Toolkits, and dedicated e-charging infrastructure.

In addition, ING has been a frontrunner in issuing green Schuldscheins (SSDs) for companies down the automotive value chain. For example, ING along with two other banks acted as lead arrangers for the MANN+HUMMEL Green SSD, which is the third consecutive Green SSD for the company that ING has arranged. Through the SSD MANN+HUMMEL is committing to financing and refinancing eligible green projects, such as those products and services with an environmental benefit, and the improvement in environmental impact of production facilities and processes. MANN+HUMMEL is a leading manufacturer of water and air filtration systems and electrified propulsion products used in electric vehicles.

ING sustainable investments also recently participated in Black Bear's €16 million funding round, to fund processes refinements and the worldwide roll-out of the company's technology. The Netherlands-based company, founded in 2010, has developed a unique process for producing carbon black from tyres (a fine powder used to provide structure in the manufacturing of tyres and as a colourant by the plastic and paint industry) while tackling the 1.5 billion tyres that reach the end of their life every year.

Next steps

- We will continue to align our client base in accordance with our goal to steer our portfolio towards the 1.5 degree goal. This involves working to outperform the market in the near term, with the aim of seeing quicker convergence towards our 2050 target.
- We will encourage sustainable products and aim to create new products/services that support our clients' transition path while adding value. ING maintains a close working relationship with our automotive clients, valuing open, engaging discussions about sustainability and their own transitions.
- ING will also focus on financing other parts of the EV value chain to support growth of infrastructure that is needed, including charging stations and battery production to scale zero-emissions vehicles.
- We will continue to contribute to thought leadership for sustainability in the automotive sector.

Aviation

The aviation industry is still adjusting to a world with coronavirus and a myriad of cross-border travel restrictions, which saw 2020's absolute CO_2 emissions fall by 47% vs. 2019. Despite this large contextual shift, the topic of sustainability has continued to feature prominently in the industry's 'build back better' initiatives as it continues to explore avenues to decarbonise.

Globally, the aviation sector comprises up to 3% of CO_2 emissions, which is relatively little, although expected to increase as air traffic recovers and continues its growth while other sectors decarbonise. Pre-pandemic, air traffic growth – fuelled by emerging economies and a ticket price race to the bottom – has vastly outpaced efficiency gains. Awareness around the industry's environmental impact, however, has grown alongside this demand.

Latest generation aircraft are up to 25% more fuel-efficient and while modern engine technology is at the cutting edge of what's technologically possible, major challenges remain. Alternative propulsion technologies – most prominently hydrogen and battery-powered electric flights – are in the experimental phase. However, they are unlikely to serve long-haul air travel, the most energy-intensive and hardest to replace segment of air travel. These slow steps come at tremendous expense.

The industry's incremental cost of decarbonising is possibly the highest of any sector globally – it's incredibly complex and expensive as the development of any new aircraft from scratch is a once-in-a-decade exercise, associated with costs in the tens of billions of euros. Added to this, the aviation sector is one of the most regulated sectors, as it's not possible to experiment with new technology when transporting millions of people daily. It is also understandable that the industry focuses on incremental improvements rather than revolutionary design overhauls. Still, the sector is progressing.

Sector outlook

Prolongation of cross-border travel restrictions will do further harm to airlines' ability to operate flights as efficiently as possible, while the – previously waived – take-off and landing slot system of having to use 50% of the allotted slots might force airlines to operate flights without material demand. Airlines will need to start compensating for their CO_2 emissions under both the EU's Emissions Trading Scheme and the Carbon Offsetting and Reduction Scheme for International Aviation, adding a significant cost burden. Yet, both programmes have attracted criticism for their limited scope.

Numerous European countries have now prescribed a future minimum amount of sustainable aviation fuels to be used by their airlines. However, these mandates risk forcing airlines to use less sustainable biofuels as the industry continues to face limited availability of supply given the competing uses for biofuels and the infancy of e-kerosene production.

"Despite a significant reduction in absolute aviation emissions, the coronavirus pandemic has had a devasting impact on the aviation sector, including a detrimental effect on relative aircraft efficiency. However, we are assured that sustainability continues to be a strategic priority for our clients and we stand ready to support our clients in their transition."

– Hugo Kanters, global lead of Aviation Sector

Several decarbonisation roadmaps have been published, most prominently under the International Energy Agency's Net Zero Emissions ("NZE") and the European Commission's Fit for 55 initiative. While the NZE prescribes restrained traffic growth and the adoption of electric and hydrogen aircraft, both roadmaps require significant growth in biofuel adoption (from only 0.01% of the fuel mix currently). Fit for 55, for now a set of legislative proposals that require unanimous member state support, aims to tax conventional kerosene for intra-European flights and requires airlines to pay for carbon credits, as free carbon allowances will be phased out.

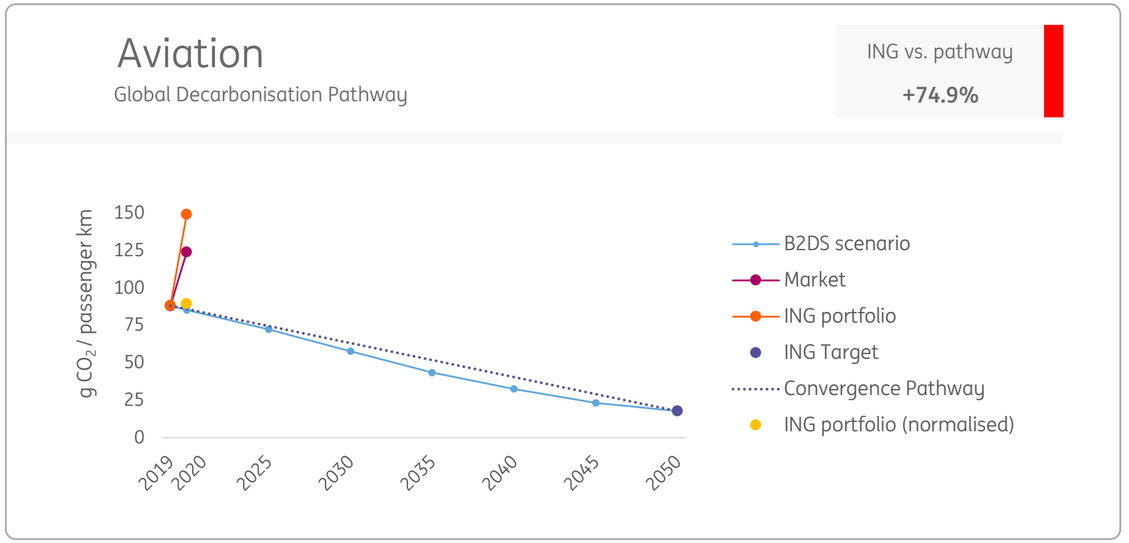
The coronavirus pandemic has undoubtedly put the 'build back better' mindset at the top of many corporate agendas, and as such it is timely to establish a framework of incentives, as opposed to punitive measures with funds lost to other causes. While offsetting schemes provide short-term relief, longer-term prospects are better served by investing in truly sustainable aviation fuels as these fuels significantly lower the CO_2 footprint, can be gradually adopted as a drop-in fuel in conjunction with conventional jet fuel and can help to decarbonise long-haul air travel.

Steering our portfolio

ING's global aircraft finance portfolio consolidates outstandings of roughly €3.1bn and includes 455 aircraft with an average age of 5.1 years. The calculation of emission intensities (CO_2 emissions per passenger-km per aircraft) is based on aircraft-specific information such as the aircraft's number of seats and flight data from 2019 and 2020 (average distance per flight), which is supplemented with the airline's load factor and publicly available fuel consumption data for different distance categories. This is subsequently weighted by the aircraft's funded loan to arrive at an average CO_2 intensity for ING's portfolio.

Aviation	
Outstandings in scope	€3.1 billion

Figure 10 Aviation Decarbonisation Pathway



While the coronavirus pandemic has led to a significant reduction in absolute aviation emissions (estimated at 47%[38]), it has had a devastating impact on relative efficiency owing to the global fall in load factors. As such, and as a way of normalising the data for the unprecedented impact of coronavirus, this report discloses, for the 2020 portfolio, two figures: the portfolio's CO_2 intensity as of 2020 year-end without any adjustment, and the portfolio's CO_2 intensity using 2019 load factor data – which we refer to as normalised intensity.

38 Estimate based on analysis of data provided by Cirium.

ING's normalised 2020 weighted average CO_2 intensity (89.5 g/RPK) is above the B2DS scenario (85.3 g/RPK), whereas the unadjusted weighted average CO_2 intensity of ING's portfolio (149.2 g/RPK) is well above the B2DS scenario and above that of the global fleet's average (124.1 g/RPK). Despite 2020's significant reduction in absolute emissions (approximately 47%), increased relative inefficiency is the result of extraordinarily low global load factors (average of 66% vs. 82% in 2019) and shorter flight distances (2,376km vs. 2,674km in 2019) leading to increased fuel consumption (5.3l/km vs. 5.2l/km in 2019).

Advising and financing our clients

ING has played an instrumental role in developing a climate alignment methodology for the aviation sector. We actively marketed and sought feedback on this methodology from clients and industry stakeholders, with the goal of converging towards a single industry standard.

Since our last report, we've had and continue to have frequent conversations with our clients globally on what Terra means and what airlines could do to reduce their carbon footprint. These are fruitful discussions, where we cover what ING is doing and how we can help, the trends and implications, and where we see the financial sector heading. Generally, there is a lot of awareness and commitment, although transition financing is required. For now, and in the absence of scalable and commercially viable alternatives, we work together on financing latest generation aircraft, as these are typically up to 25% more fuel-efficient than the preceding generation. Currently, around 38% of our loan book consists of these aircraft (vs. 25% at YE19). With increasing societal pressure on carbon footprints, airlines have a clear incentive to adopt energy-efficient latest generation aircraft.

Next steps

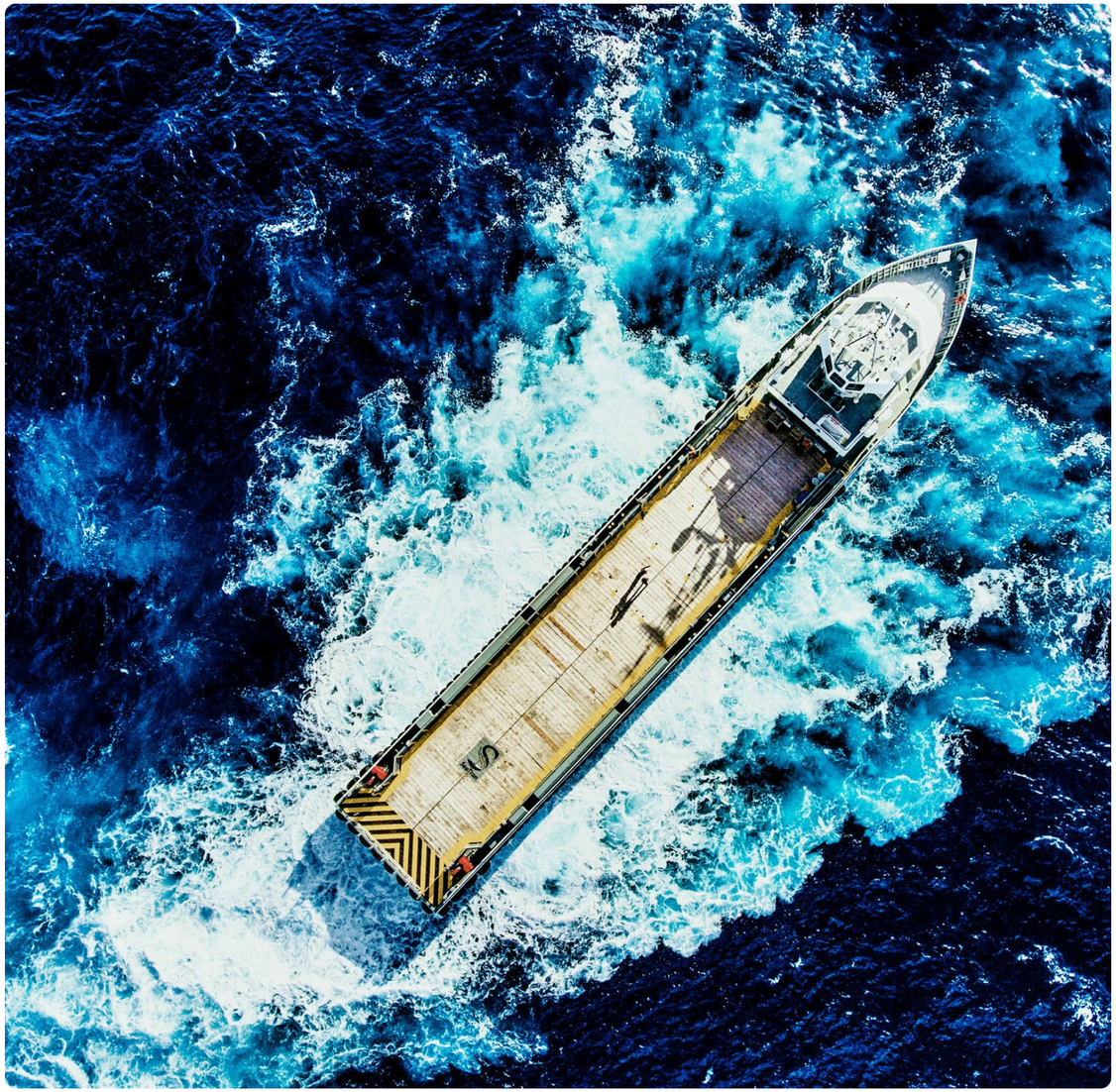
- The adopted methodology remains under development to account for aspects such as the increasing adoption of sustainable aviation fuels and as the industry is working towards a single carbon calculator and target.
- ING continues to champion sustainable products and we aim to support our clients' transition path. We maintain a close working relationship with many of our aviation clients, valuing open discussions about sustainability and the transition pathway.
- Lastly, ING will continue to incentivise and promote transparency among airlines, lessors, banks and other industry stakeholders to help the industry transition to a cleaner future.

Shipping

Shipping accounts for approximately 2-3% of global CO2 emissions, and we are seeing a rapid increase in the number of discussions and initiatives on sustainability in the sector to address this contribution. These include sustainable improvement loans, fuel development initiatives, International Maritime Organisation (IMO) regulations and discussions on market based measures such as carbon taxes.

Pre-pandemic, the sector was focussed on reducing fuel consumption and moving towards so-called eco ships. The ambition was to improve engine and hull design, but engines are still using traditional fuel types. In the past year, however, the focus has shifted toward finding the non-carbon fuel of the future. Consequently, the industry is increasingly exploring new fuels and technologies, including engines powered by hydrogen fuel, electricity or methanol, and how sails can also help to reduce emissions on certain routes.

Currently, none of these technologies have reached proof at scale, but they are being tested and are operating successfully on small vessels travelling short distances. For example, we are already seeing hydrogen-powered and electric-powered ships, but these are typically inter-island small ferries that travel short distances between fixed points. They stop every few hours to let passengers on and off and can recharge their batteries or take more hydrogen on board. This technology isn't yet viable for large cargo ships, such as those sailing between Brazil and China, but they do offer a promise of more innovation to come.



Sector outlook

In 2019, ING, along with 10 other major banks launched the Poseidon Principles (PP) to support the shipping industry's reduction of carbon emissions. The PP has provided a lot of positive momentum and we now see other industry players following this lead, for example, the Sea Cargo Charter for charterers. As more than 90% of world trade is seaborne, the pressure on owners, charterers and insurers to change and become more transparent in disclosing their ESG reporting is growing. We expect this trend to continue and intensify.

One of the major obstacles to 'greening' the industry is that shipping is fragmented with numerous owners, shipyards and charterers. Trying to get everyone moving in the same direction is extremely challenging as there are always different perspectives, global regulation is slow to be introduced and not always uniformly enforced. Therefore, a harmonised regulatory approach to ensure a level playing field is required. At the same time, however, all stakeholders need to bring about change. Whether that is cargo owners only chartering the most fuel-efficient ships, banks only financing these ships and insurers only insuring them.

In addition to industry alignment, the most recent information still shows uncertainty about the non-carbon fuel of the future. We hope to see all stakeholders collaborating and moving faster to test and scale technologies to maximise the use of alternative fuels. In addition, we will need to see considerable investment in land-based infrastructure to ensure that these fuels are readily available on a global basis.

"The shipping industry can no longer take a passive role in the decarbonisation of the planet and society now, understandably, demands that we take action to reduce and ultimately eradicate harmful emissions. At ING we are committed to encouraging the industry to take the right steps and will work with our clients to help them achieve net zero emissions. We will do this by advising on, arranging and providing finance for a more sustainable shipping industry."

– Stephen Fewster, global lead of Shipping Sector, and Treasurer of the Poseidon Principles Steering Committee

Many of these challenges persist, but sustainability is higher up the agenda than ever before. As a hard to abate sector, a net zero ambition by 2050 will be extremely challenging to achieve, but there is no room for apathy. As part of the NZE, shipping is strongly encouraged to go beyond the existing 50% absolute reduction target in greenhouse gas (GHG) emissions. Whether feasible or not, the industry is facing increasing pressure and needs to demonstrate that it is doing its utmost to make marine transportation as clean as possible.

Governments and maritime regulatory bodies play an important role in holding the industry to account and encouraging sustainability. Market-based measures, including for example, a carbon levy could be introduced with the monies raised used to fund research and development. At the national level governments could subsidise initiatives or discourage polluters by making them pay higher port fees[39].

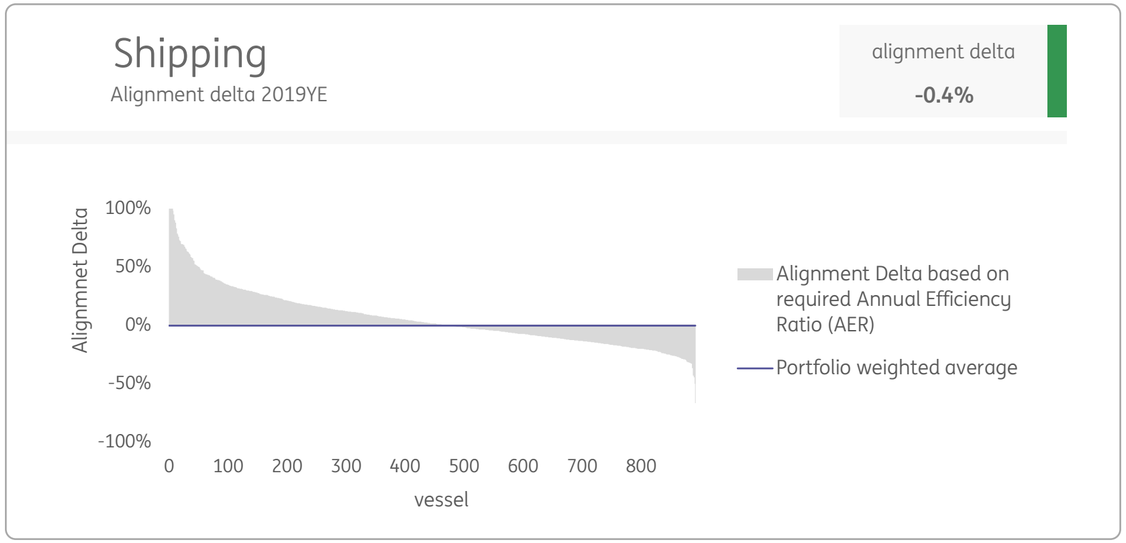
Steering our portfolio

The IMO GHG Strategy sets the ambition to peak GHG emissions from international shipping as soon as possible and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008.

As part of our commitment under the PP, we reached out to clients in Q3 2020 and received actual 2019 emissions data for approximately 90% of the vessels we finance. After adding the debt weight per vessel we have been pleased to report a -0.4% debt-weighted portfolio Alignment Delta (AD) in the PP annual disclosure report released in December 2020.

Shipping	
Outstandings in scope	€6.3 billion (2019YE)

Figure 11 Shipping Portfolio Alignment Delta per Vessel



In last year's Terra report we used estimated 2019 emissions data and reported a debt-weighted portfolio AD of -8%. However, in this year's report we used actual rather than estimated emissions. While the asset base, trajectories and methodology are the same, the estimated data appeared optimistic considering the different portfolio ADs of -8% and -0.4%, respectively. Although the actual data only covers 2019, we

39 For insights from ING Sector Research on shipping see https://think.ing.com/sector/logistics-automotive/

feel that accuracy outweighs timing when informing our stakeholders on sector alignment. Therefore, we have decided to use actual 2019 emission data instead of 2020 estimates.

Similar to last year, the combination of distance travelled, fuel consumed and a ship's deadweight tonnage (dwt) is used to arrive at an emission intensity level per dwt/nm, also called the annual efficiency ratio (AER). This is calculated for each ship in ING's portfolio and as a result we can see whether an individual vessel as well as our portfolio is aligned with the required AER for progressing in line with the IMO ambition (see Figure 11). The AD is the distance from the required AER for each vessel.

We are and have been pleased to see our ship finance book at 0.4% below the PP decarbonisation trajectory of 2019. Although it is premature to draw conclusions based on one year of actual emissions data, we were the only commercial bank reporting an AD below trajectory.

Advising and financing our clients

To align our portfolio, we've continued to engage with clients, with an emphasis on improving the efficiency of vessels and minimising the environmental impact for the entire vessel lifecycle. For example, in Singapore we acted as joint sustainability coordinator and jointly provided a sustainability-linked loan to Hafnia to support its journey in shipping decarbonisation. In another example, we supported Avance Gas Holding with a sustainability-linked loan, linked to its ambition to reduce and outperform the carbon intensity targets set in the Poseidon Principles.

Next steps

- To continue the transition, banks will need to finance owners to invest in new ships or to retrofit existing ships, and charterers should be willing to pay a premium for less carbon-intensive vessels. To see significant shifts in the global fleet, new technologies need to be developed but we also need to create demand which can be achieved in a number of ways, including societal pressure, incentives and/or regulation.
- We are strongly motivated to continue making our sustainable financing solutions available, but to also extend these sustainability mechanisms to products in financial markets, for example. Furthermore, we will support solutions to find cleaner fuels and help to make these widely available at key locations.
- In our commercial committees we continue steering on whether transactions align with our portfolio objectives. We're working with our colleagues from ING Labs on a potential platform to instantly review and assess the portfolio's alignment score and identify the most material criteria driving portfolio alignment.
- We plan to encourage further participation in the Poseidon Principles. Whereas last year there was a question mark as to whether clients would cooperate under the PP, the initiative has proven itself. With 27 financial institutions now being a signatory to the PP compared to 11 signatories at its launch in June 2019, it is fair to conclude that environmental protection is growing on the Shipping agenda.

Managing climate and environmental risks in the transport and logistics sector

Despite the current pandemic travel restrictions, transport is a growing industry with high social value. Over the next three decades passenger transport is forecast to increase by 2.3 times and freight transport by 2.6 times[40]. At the same time, transport currently accounts for 24%[41] of global direct CO_2 emissions from fuel combustion, with some sectors being notoriously difficult to decarbonise given the required energy density of mobile fuels.

The unpredictable pace of decarbonisation poses transition risks for the industry in the form of policy, technology and market risk. Concurrently, the environmental impact of climate change creates both acute and chronic physical risk for real assets.

Risk identification

Over the last 12 months, a bank wide climate and environmental risk heatmap was developed to identify transition, physical and environmental risks across ING's sectors. Overall, the exposures within the transport & logistics loan portfolios were assessed to have a low to medium climate and environmental risk over a five-year horizon. Beyond this time horizon we might expect to note increased chances of transition risk for some sub-sectors, for example Shipping or Aviation.

Table 5 Transport & Logistics: sub-sector level outcome of climate-related and environmental risk heat mapping

Transport & logistics subsectors	Transition Risk	Physical & Environmental Risk
Automotive	Low – Medium	Low – Medium
Aviation	Low – Medium	Low – Medium
Containers & Logistics	Low – Medium	Low – Medium
Land Transport	Low – Medium	Low – Medium
Shipping	Low – Medium	Low – Medium

The most noteworthy risk across the subsectors was determined to be the impact of changing climate and environmental policy and regulation on clients' credit profiles. This risk manifests differently across sub-sector value chains with varying financial implications.

For example, an airline's ability to pass the cost of carbon taxes on to passengers in the form of higher ticket prices depends on that airline's pricing power and local demand dynamics. In shipping, a regulation requiring the retrofitting of existing vessels impacts ship owners through increased capital expenditures, while an increase in the cost of cleaner fuel oil may only impact charterers through higher fuel costs, depending on contract structures. In the automotive industry, OEMs[42] face varying risks depending on the degree to which they can or have already invested capital expenditures in shifting their R&D and production towards electrified powertrains.

The impact of acute and chronic weather changes on clients' credit profiles was regarded as low over the five-year time horizon. This is due to the general moveability of transportation assets, with the exceptions of port and airport infrastructure, which benefit from event risk insurance in the medium term.

40 ITF (2021), ITF Transport Outlook 2021, OECD Publishing, Paris, https://doi.org/10.1787/16826a30-en.
41 IEA (2020), Tracking Transport 2020, IEA, Paris https://www.iea.org/reports/tracking-transport-2020
42 Original Equipment Manufacturer.

Governance and risk appetite

ING's Climate Change Committee ensures board level oversight of strategic climate-related risk and opportunity management. Bank wide climate risk management is coordinated by ING's climate risk initiative dedicated team. The latter engages with Transport & Logistics Sector leadership on a regular basis and manages alignment between bank wide and sector initiatives.

In 2021 the Transport & Logistics Sector updated their sector strategy and risk appetite paper to incorporate climate-related and environmental risks, with a goal of identifying developing risks within each sub-sector and steering our portfolio and business strategy towards future opportunities presented by transition needs, new technologies or innovative business models. The heatmapping exercise was used as content for the sector paper.

Risk Management

Risk assessment within the Transport & Logistics Sector is conducted at both a portfolio and transaction level. The Transport & Logistics Sector heatmap on climate and environmental risks is a strong risk identification tool used in these processes.

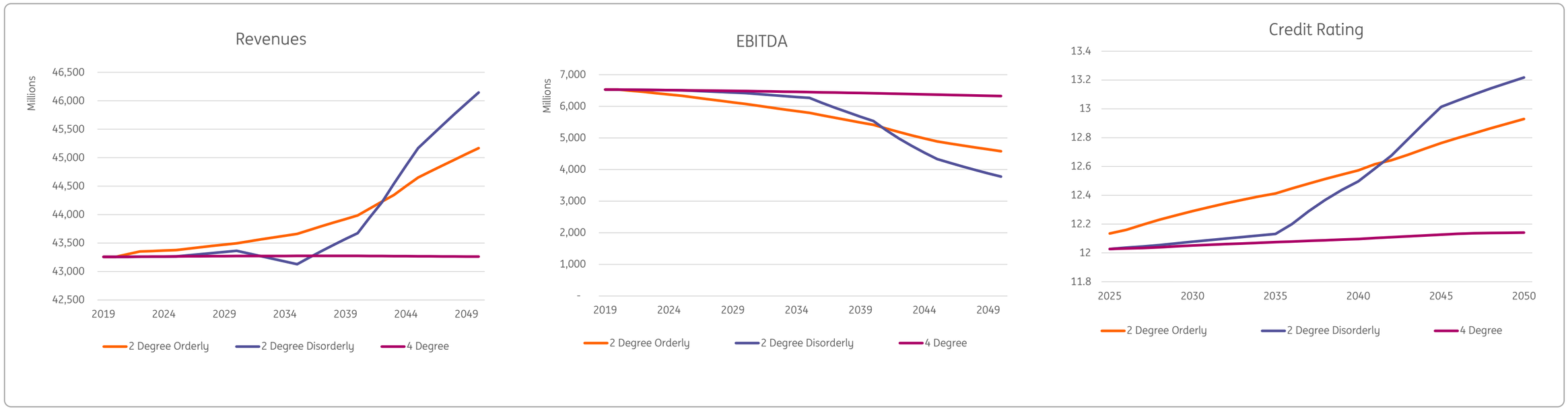
During the heatmapping process described above in the risk identification section, it became clear that a number of existing subsector credit risk mitigation strategies had the dual benefit of addressing climate- and environmental-related risks. For example, a focus on younger, more fuel-efficient aircraft and vessel collateral, reduces stranded asset risk; diversification requirements in portfolio financing reduce the potential impact of loss of revenues from any one high-risk industry; a focus on higher credit quality clients with financial adaptability enhances clients' disruptive resilience; and maximum tenor limitations reduce exposure to transition and physical risks expected to manifest over the longer term.

At a transaction level, climate and environmental risk is being integrated into the organisation's existing risk management processes – resulting in front office and risk teams with specialised industry knowledge carrying out assessments during the commercial and credit stages. Credit risk proposals already involve a holistic risk assessment of the business, transaction structure, collateral, as well as financial modelling under base and stress scenarios with various assumptions (e.g. lower demand, increased fuel costs). Material climate-related risks identified in existing transactions are to be assessed during regular credit reviews. Risk management depends on the identified risks, but can include changes to the transaction structure, collateral or insurance requirements.

While risk drivers are still assessed using traditional credit risk assessment methods such as qualitative credit analysis & transaction level financial scenario modelling, we continue to evaluate potential quantitative metrics for climate risk measurement. In 2021, the Transport & Logistics Sector participated in a pilot with Baringa, as described in the previous 'Managing climate and environmental risks' chapter, to evaluate the forecasted financial metrics of a sample of companies under different emission pathways and scenarios.

The following charts[43] display a projection of the data for a selection of airline companies in scope of the Baringa exercise. In the charts we see how the revenues, EBITDA, and credit rating of the companies would evolve until 2050, under the three climate pathway scenarios modelled in the exercise[44]. The credit rating, shows the equivalent of a one-notch downgrade from 12 to 13 on the scale. Important to note again, however, is that the model used in the exercise assumes that no climate transition strategies have been implemented by the companies during this time.

Figure 12 Scenario analysis pilot: example of data output



43 The graphs displayed do not reflect any one particular company and are for illustrative purposes only.
44 See section on Climate Risk for a description of the scenarios.

Zoom in: Circular economy and climate change

A Circular Economy approach offers a systemic response to the climate crisis, as it addresses how we use our raw materials and resources to create a sustainable economy free of waste and emissions. It means shifting from the current linear model of 'take, make, waste' to an economy where we 'reduce, reuse, recycle'.

Meeting climate targets will require tackling the 45% of emissions associated with making products among other things[45]. In our economy, this transformation can be achieved by substantially increasing the use rates of assets, such as buildings and vehicles, and recycling and re-using the materials used to make them. This reduces the demand for virgin materials such as steel, aluminum, cement and plastics, and this reduces the emissions associated with their production. According to Circle Economy's annual Circularity Gap Report[46], our global economy today is only 8.6% circular, meaning we have a long way to go.

The EUs New Circular Economy Action Plan, one of the main building blocks of the EU Green Deal, aims to reduce the EU's consumption footprint and double the EU's circular material use rate in the coming decade. To do this, the plan announces initiatives to guide the entire life cycle of products, from design and manufacturing to consumption, repair, reuse, recycling, and bringing resources back into the economy.

In supporting our clients in financing circular business models we focus on those value chains that use the most resources and where the potential for circularity is high, such as Plastics, Packaging, Batteries and Vehicles and Electronic/ICT equipment. We support our clients by providing sustainable finance solutions to fund their circular activities, such as Green Loans and Green and Sustainability Bonds where the use-of-proceeds is related to products, processes and technologies adapted to the circular economy. We also support our clients transitioning to these models giving an incentive to achieve certain circular milestones through our sustainability-linked loans and Bonds.

Our clients have to rethink how they design their products, how they optimise usage and how the materials are recovered and recycled at the end of the lifecycle. Subsequently we see the rise of new business models, such as sharing platforms and Products-as-a-service (PaaS), each of which can have unique financial challenges. To support these, our Sustainable Investments team and our Sustainable Structured Finance team are able to provide risk-bearing capital and specific structuring knowledge to build specific solutions to finance the new business models needed for the transition.

Case study

E-bike to go, an electric bike subscription service from the Netherlands, is bringing sustainable transport to both B2B and B2C customers. The e-bike market is expanding rapidly, meanwhile younger generations are already comfortable with the shift from 'ownership to access' thanks to now-ubiquitous music and media subscription services. E-bike to go has responded to this willingness to forgo ownership in favour of using the PaaS model. Sustainability runs through the centre of the PaaS model: the longer the product lasts, the longer a subscription can be taken for its usage. So, the quality and design of an e-bike is crucial. E-bike to go's design makes the bikes robust and durable, with components that are easily repaired or recycled to reduce waste. After four years of use, the bikes are refurbished, which helps them to last another four years.

Financing structures in PaaS are relatively new and are more risky than regular ownership models. In a subscription model it's about usage and cashflows linked to that usage, which requires another way of looking at the finance structure. We have therefore developed a framework to assess finance structures, taking into account the sustainable and circular aspects of the transaction as well as the business model, the market and the financial parameters. ING provided a term-loan for E-bike to go for up to 5,000 new e-bikes. The strong circular and sustainable approach of E-bike to go was an important reason for us to support the company.

45 Ellen MacArthur foundation https://climate.ellenmacarthurfoundation.org/
46 Circularity Gap Report 2021 by Circle Economy, https://www.circularity-gap.world/2021

Commercial and residential real estate

Commercial and residential real estate

As the world continues to develop, so do the buildings and infrastructure within it. Positively, more focus is being placed on sustainable construction and materials, as well as lifecycle management and measuring the energy output of buildings. However, the need for an adequate built environment is growing, and therefore it is more important than ever to ensure that both the commercial and residential real estate sectors carry their responsibility to reach the goals of the Paris Agreement.

Buildings consume roughly 36-40% of global energy and are responsible for about 40% of total direct and indirect CO_2 emissions[47,48]. Drilling down we also see that houses generally account for about 22% of direct and indirect CO_2 emissions in the EU[49]. Real estate, therefore, has a significant role to play in meeting the Paris Agreement goals. In particular, new buildings will need to be energy-neutral or even energy-generating beyond 2025, while the majority of existing buildings, both commercial and residential, will need to undergo vast renovations to significantly improve their energy efficiency.

"There is a long way to go to help all of our real estate and mortgage clients improve the energy efficiency of their homes. A robust approach to data availability and ambitious regulation will be critical to encouraging a faster transition, and we look forward to helping our clients take the necessary steps."

– Aris Bogdaneris, global head of Retail Banking, head of Challengers & Growth Markets and MBB member

47 https://www.worldgbc.org/sites/default/files/UNEP%20188_GABC_en%20%28web%29.pdf / 2020 GLOBAL STATUS REPORT FOR BUILDINGS AND CONSTRUCTION Towards a zero-emissions, efficient and resilient buildings and construction sector
48 https://www.iea.org/topics/energyefficiency/buildings/
49 Household carbon footprint in EU-27. Includes indirect impact from forestry and wood products, construction materials, electricity, fuels and waste. Direct household use of resources is also included. The data was compiled within the EU fp7 project GLAMURS based on the EE MRIO EXIOBASE v2.3 developed within the EU fp7 project CREEA and provided by https://environmentalfootprints.org/eu-regional.

To sufficiently meet a net zero ambition, we believe that focusing on existing building stock will be the most important[50]. This involves taking concrete actions to help our customers to improve the sustainability of their existing homes and buildings.

Commercial real estate

Within ING Wholesale Banking the Real Estate Sector is providing financing solutions for an international and institutional client base (including global asset managers, stock-listed real estate companies/REITs, pension funds, insurance companies and family offices). The lending portfolio has an exposure in 15 countries in APAC, EMEA and the US with total limits €27.5 bn. Real Estate Sector teams are provide financing for different kinds of asset classes such as large office buildings, multi-family and residential portfolios, senior and student housing, logistics assets and retail buildings including large shopping centres. Sustainability is a key element in the global business strategy for Real Estate Sector.

In addition, in the Netherlands, we operate a large portfolio of real estate finance for mid-corporate companies, known as Real Estate Finance, Business Banking NL (REF NL). This is also the part of the portfolio that we have mapped against our climate alignment targets so far. In the Netherlands, we are working in accordance with Dutch legislation that mandates improvements by 2023. Currently our local targets include:

- By 2023: 100% green energy label (A, B or C)for commercial buildings.
- By 2030: 50% completion of the kWh/m² Paris-proof goals per sector.
- By 2040: achieve the Paris-proof objectives (10 years earlier than the Delta Plan target)
- We will only recognise A-labels and above as ‘green’ From 1-1-2022
- We will reduce the number of new ‘non-green’ labels to be financed in the next seven years

Sector outlook

Of course, we still face significant challenges. Access to sufficient data on the energy output of buildings, for example, continues to be an issue in the sector, however, we are seeing trends in the right direction.

In addition, we still do not have a market standard and average to use as a benchmark in this sector. Other financiers are following our approach by setting very clear goals for their portfolios. With the development of initiatives such as the Carbon Risk Real Estate Monitor (CRREM) and PCAF, along with the output of the Dutch Green Building Council in the Netherlands, we believe that we are approaching a time when we can truly compare ourselves to the market.

Globally, we face no or limited alignment of building standards and energy efficiency and carbon emission benchmarks in different countries. Multiple legal frameworks and national strategies, including on the circular economy, waste management, wellbeing and social standards are leading to an increased complexity in the development of a sustainable finance framework for a global business. ING cooperates with national real estate players (owners, lenders, real estate organisations) to help develop standards and share experiences in the different countries, where we are active in the real estate business.

50 The commercial real estate sector represents commercial buildings, such as schools, offices and car parks in the Netherlands only.

Steering our portfolio

The scope for our alignment reporting currently covers our lending to mid-corporate real estate clients in the Netherlands, which accounts for approximately 40% of our commercial real estate portfolio. We are currently working to expand our data approach to increase this scope in the years ahead. The next countries we aim to add from the Wholesale Banking Real Estate Sector will be Belgium, France, Germany, and the UK with a clear focus on the major asset classes – office, logistics and residential. By the end of 2023 at the latest we plan to have reporting in place that covers at least 80% of the Wholesale Banking Real Estate Sector lending exposure in all three business regions (APAC, EMEA and US).

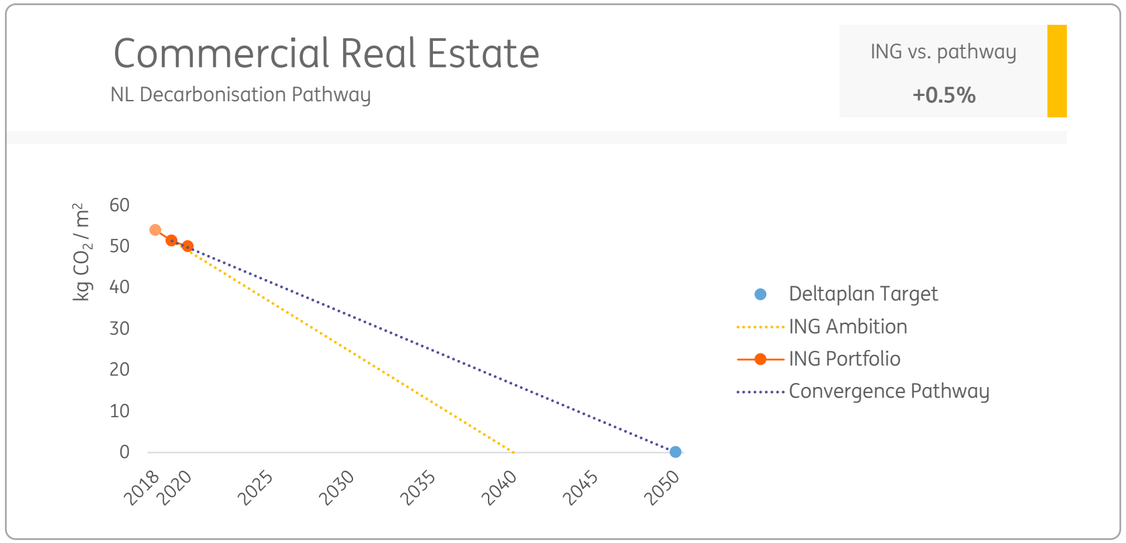
The results set out below outline two important aspects. Firstly, the results show the average CO_2 emission intensity (kg CO_2/m^2) from 2020 for our REF NL portfolio. Secondly the results show the decarbonisation pathways for ING's commercial real estate NL portfolio. These pathways outline not only ING's ultimate target for Paris-proof carbon emissions, but also the necessary targets for the years ahead. The target-setting has been determined by the Dutch Green Building Council's Paris Proof Delta Plan.[51] In addition, ING has determined its own ambitious goal of being Paris-proof by 2040.

The 2018, CO_2 intensity only covered around 60% of the REF NL portfolio (with the missing 40% being the more energy-efficient buildings). Since 2019 the intensity figure covers the full NL portfolio. We therefore decided to make 2019 the new starting point of the pathways, making a fair comparison with 2020 and future years possible. As in our 2020 report, we assessed 100% of the buildings in our Netherlands portfolio.

51 Terra has converted the average annual kWh/m^2 target set by the Delta Plan into a CO_2 intensity metric (Kg CO_2/m^2).

Commercial real estate	
Outstandings in scope	€11.2 billion

Figure 13 REF NL Decarbonisation Pathway



Our emissions intensity for the full portfolio is 50.04 kg CO_2/m^2. This is a decrease of 2.70% in comparison to the previous year. In relation to the decarbonisation pathways, REF NL sits 0.5% above the Delta Plan Target of 49.8 kg CO_2/m^2. When looking at our ING ambition, which is to be Paris-proof by 2040, we are currently slightly above our planned target of 49.0 kg CO_2/m^2 in 2020. The downward trend is a very positive sign that we are heading in the right direction, but more effort is needed to ensure we remain on track to achieve our 2040 ambition.

We are unfortunately unable to make a direct comparison of the REF NL lending portfolio with the Dutch market. This is primarily because there is limited data available to sufficiently identify the average of the Dutch market. When looking at the office market, our portfolio has an average performance of 44.97 kg CO_2/m^2. Only 34% of the market currently aligns with the 2023 regulatory expectations.

Currently, we are on track to comply with legislation and regulations[52] that are coming into effect in 2023. We had an ambitious 2020 goal, which was to ensure that 90% of all office buildings we finance have an energy label of A, B or C, in line with Dutch legislation in effect from 2023 for office buildings. While falling just short of this goal, 85% of our office buildings now reach this requirement and the remaining 15% have a clear plan of action to meet this goal. The main reason for not meeting our target is that a large proportion of the remaining office buildings has been earmarked for demolition or for transformation into apartments.

Another objective was to ensure that 67% of all other asset types have a provisional energy label of A, B or C by year-end 2020. We were able to reach 65%, which is positive progress. The 2019 goal was 60% 'green labelled' of the whole portfolio in mix, so office and other asset types together. In 2020 this goal was split into 'office' (90% in line with 2023 legislation) and 'other' (67% 'green').

We are participating in discussions with other banks on the development of the Partnership for Carbon Accounting Financials (PCAF) methodology for the sector. Through this partnership PCAF has developed a grading system to determine the quality of the data that is used to report on carbon emissions, where ING currently sits at both Score 2 & 3[53].

Advising and financing our clients

In many cases globally, our clients are already developing individual sustainability strategies to steer their assets towards Paris alignment and/or net zero carbon targets. In these cases ING works alongside them to advise and contribute to their strategies and provide financing to help them achieve their ambitions.

Because the existing building stock is the most important factor for meeting global climate goals, this is where we are focussing our efforts to support clients in improving existing buildings. To achieve these goals, we have initiated various efforts with our colleagues and clients. To support this work, we have built a global real estate finance Sustainability Champions network to support clients in their transition.

Globally, our Wholesale Banking Real Estate Sector is a large provider of Green Investment loans and sustainability-linked loans based on international standards with a growing share in the lending book of ING (total €800m). This has been established via multiple transactions, where pricing is linked to the sustainability performance of the clients (either based on sustainability ratings or individual KPI-setting). To ensure our definition of sustainability in these transactions is aligned, we updated our global scorecard system in line with the EU Taxonomy.

52 https://www.rvo.nl/onderwerpen/duurzaam-ondernemen/gebouwen/wetten-en-regels/bestaande-bouw/energielabel-c-kantoren
53 https://carbonaccountingfinancials.com/files/downloads/PCAF-Global-GHG-Standard.pdf

Through this lending we have added €800mln of new green lending assets to the real estate finance green bond pool of €4.1bln total. We also allocated €290m of this lending against ING's Green Bond Framework, where the loans, provided to buildings which are very energy efficient, met the criteria established in the Framework.

In July 2021, our Wholesale Bank Real Estate Sector together with UniCredit, acted as green advisor, original lender and mandated lead arranger, for a € 130 million five-year loan to BVK Highstreet Retail Cordusio S.p.A, owner of Cordusio 2.0, a mixed-use building managed by Hines. The term loan is structured according to the LMA Green Loan Principles. The building is a mixed-use office and retail asset (originally built in 1892) with approximately 15,000m², which was acquired by BVK and Hines in 2016 and it underwent an intensive capex plan between 2017 and 2019 to reach all the modern standards for a property of this kind and it has now been let to national and international tenants. As the property is LEED Gold Certified, the Facility met the eligibility requirements for a green loan.

For smaller mid-corporate clients in countries such as the Netherlands we're also able to provide strong advisory services to help our real estate finance clients to determine the best sustainability strategies.

A critical step in supporting clients is providing our colleagues with real-time and up-to-date sustainability data on the financed portfolios. Therefore, in the Netherlands we developed an online tool that integrates sustainability information into our ING client portal. These insights should give clients an understanding of where they currently stand, and how they can make the transition. Alongside a list of measures to improve the energy label, the tool also specifies the investment, savings and CO_2 reduction for each measure.

This is then connected to ING providing financing for these solutions. In the Netherlands in 2020 we launched our first sustainability loan for the sector, which focuses on 100% financing towards an A label building (with a reduced rate of 1% interest per year). The €17.6 mln transaction supported a client with two retail buildings in Nijmegen, where the buildings will be improved from Energy label E to Energy label A. We expect to provide more of these loans in the coming years.

We've also run pilots in the field of home insulation and housing labels, where we are finding opportunities to improve the energy labels of our financed commercial residential properties. These pilots have already enabled us to support 1,400 of these properties with an energy label (including a plan of approach towards energy label A) and we are working to engage multiple suppliers of insulation measures.

On the resourcing side, we have conducted research into circularity and different valuation methods linked to it and we now requesting a standard sustainable building assessment in every building valuation report.

Finally, as clients continue their journey to reduce their emissions, we are also providing them with a means to compensate for their remaining emissions. Recently, we launched 'Het Vastgoedbos' (The Real Estate Forest), which allows clients to compensate for their CO_2 emissions by planting trees in the Netherlands and Bolivia. The forest will cover 19ha forest in the Netherlands (around 75,000 trees) and 170ha in Bolivia equivalent to around 37,500 t CO_2. This will compensate for 10% of the emissions of all our collaterals and more than 20% of the total loan book.

> Transformation of the real estate industry is key in addressing the impact of climate change. It requires an integrated and inclusive approach that involves all relevant stakeholders, including finance providers. The need for change is widely recognized within the sector but there is much work to be done to develop a coherent vision and alignment in approach. We have a role to play not only in providing financing but in sharing knowledge, facilitating closer cooperation within the sector and helping our clients define and fulfill their sustainability goals."
>
> – Elvira Kruger, global head of Real Estate and Infrastructure

Managing climate and environmental risks in commercial real estate

In 2020, ING conducted a pilot to better understand the physical effects of climate change on our commercial real estate portfolio in the Netherlands. Working with BlueLabel, we provided clients with the opportunity to scan the physical risks of their buildings. Using the process we mapped more than 7,600 postcodes to score risks such as heavy rainfall, heat stress, drought, and flooding. We are now aware of our exposure to flood (both pluvial and fluvial), drought and heat stress. We are exploring ways to make this data actionable for our clients and ourselves. Our commercial real estate and residential mortgages teams are also collaborating further on the approach to collecting and using data on climate risks across our lending to housing.

The Carbon Risk Real Estate Monitor (CCREM) is an EU initiative to accelerate the decarbonisation and climate change resilience of the commercial real estate sector. The CRREM, aims to clearly communicate the downside financial risks associated with poor energy performance and the quantification of financial implications of climate change on the building stock and deliver tooling that provides insights at the asset and portfolio level. We continue to monitor the development of the initiative to identify opportunities to provide more personal insights to our clients as well as our portfolio.

The different climate conditions covered across the various geographies of our clients in this area – APAC, EMEA, and US – mean that a detailed analysis of data is required to paint a reliable picture of the probability and potential impacts.

Next steps

- Continue to reach our local Netherlands portfolio targets and comply with relevant Dutch legislation.
- Increase data capturing and transparency about energy data and carbon footprint (also in line with EU Taxonomy requirements and ECB requirements on climate and environmental risk management) by enhancing IT systems.
- Implement a science-based and transparent benchmark system on energy consumption/ carbon emission of WB real estate lending portfolio on a country-by-country basis starting with the EMEA region.
- Develop a detailed strategy towards net zero carbon by 2050 on a country-by-country basis starting with the EMEA region.
- Increase the share of green/social finance products and help clients in the transition of brown portfolios towards green.
- Support social aspects in the real estate industry (especially in the housing sector) by providing financing solutions for large residential companies in the public and private sectors to support affordable housing.
- Extend the strategic dialogues with clients and support their activities by formulating sustainable finance frameworks including debt capital markets (green/social bonds and schuldschein).
- Connect innovative solutions in the global real estate industry and the environmental efforts of WB Real Estate Sector clients (ongoing research process with ING's innovation function NEO and clients of the WB Real Estate Sector).
- Increase contribution to the ING Green Bond framework (selection on a country-by-country basis).
- Increase the sector-based knowledge about sustainability with specific internal/external training sessions.

Residential real estate

A large part of our loan book consists of lending to residential mortgages, meaning our engagement and financing for our retail customers in this climate transition is as important to our overall impact as our Wholesale Banking clients. Across the EU, the energy intensity of homes is quite broad, and the energy mix of different countries has a major impact. Our long-term vision is to have an energy-positive mortgage portfolio by 2050. This means that the houses in our portfolio will collectively generate more energy than they consume. We plan to update this long-term vision as part of our new commitment to net zero. Aside from this long-term ambition, we have also set energy intensity reduction targets per country, informed by national government plans.

In this sense, we aim to play a constructive role, making advice and financing options (both lending and access to subsidies) available to our clients for them to take proactive steps towards reducing the energy efficiency of their homes. Beyond our clients, we also work with governments and other industry stakeholders to build innovative solutions in the sector.

Sector outlook

Supporting individuals in the climate transition, particularly with large renovations to their homes, is a difficult challenge. We have seen renovation trends across the EU fall short of what is required, where we see a number of factors preventing people from taking action. This ranges from confusion about what renovations are most important for a house, and who can provide these services, to knowing what finance and subsidies are available, and how to access them. In addition, behavioural bias is likely to play a role in consumer decisions about whether to prioritise these renovations

for action in the first place. Banks need to play an increasing role in making customers aware of financing these activities and encouraging clients to make these decisions, but all stakeholders need to do more to shift behaviour across the whole market.

Firstly, in terms of demand, we hope to see the general trend of increasing interest in sustainability in society translating into more demand from our mortgage customers to make changes in their homes.

Secondly, in terms of services and platforms that can help consumers find out what needs to be done, how to prioritise the activities, and who can undertake the renovations. ING has been involved in several innovative models and continues to look for the right approach to participate in such platforms.

And lastly, from the government in terms of a consistent and ambitious regulatory agenda that sets the vision for how and when people need to upgrade their homes. In the Netherlands, we have seen how efficiently commercial real estate can be transformed and we believe a similar approach could be helpful in encouraging and incentivising homeowners to upgrade their energy labels.

In addition to the challenge of supporting consumers, we also see large challenges in the data ecosystem at country and European level. To start with, the different approaches and public availability of EPC label data between EU countries create challenges for using the data to understand the energy intensity of homes and comparisons across markets. A standardised approach across Europe would benefit all stakeholders.

We note that the cost of registering for a new energy label in the Netherlands has also increased since our last report, and we are waiting to see whether this will have a negative impact on encouraging more people to know and upgrade their label. Recent research from the Dutch technology company, Calcasa, showed the market in NL has some way to go when it comes to reaching an average energy label of A, noting that "the current pace of sustainability is too slow and a large proportion of the homes do not yet have a definitive energy label. If we maintain the pace of the past five years, the average owner-occupied home will only have energy label A in 2055".[54]

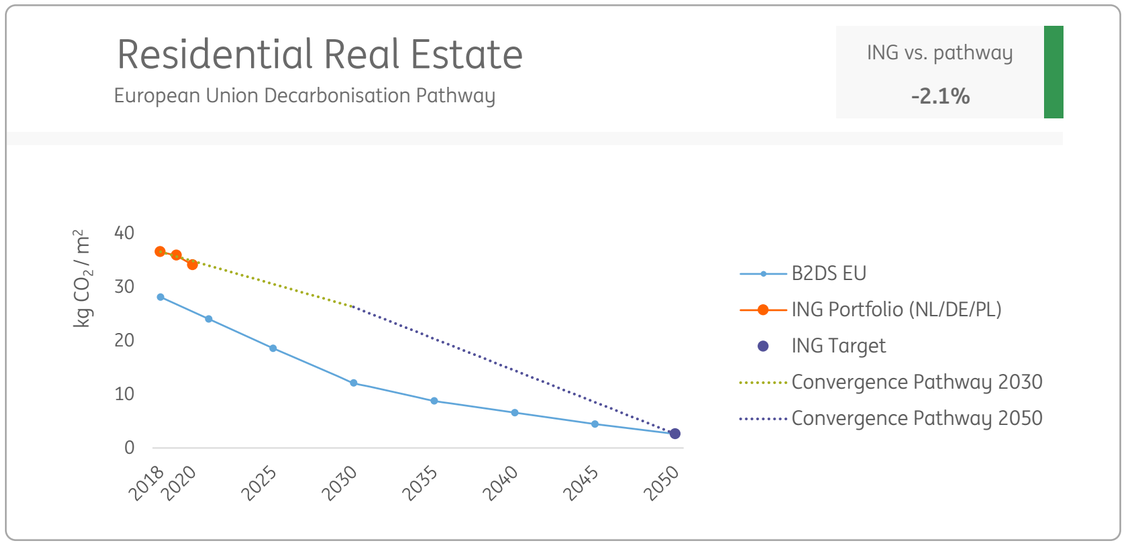
In addition, as we look beyond labels, stakeholders, including government, utilities, and banks also need to establish a way of sharing disaggregated data on actual energy used securely and privately, rather than only using proxies to determine energy intensity. Many of the proxy factors are likely to be inaccurate (for example, where labels are not updated) and furthermore, many are unlikely to change often (such as energy labels where consumers are not motivated to update them), and some not at all (such as year of original build), where it will then continue to be a challenge to demonstrate real progress on energy intensity reduction. Digitalisation offers new tools to measure and control energy use at homes, so we would look forward to being part of efforts to make use of that data to better guide our activities.

The electrification of many home heating and cooling systems, and the greening of electricity production overall, is likely to have a positive impact on reducing energy intensity, however, we see many national efforts on this front currently falling behind schedule. The effects of this will be different across countries, depending on whether they are further behind or ahead. In Poland, for example, there are official government plans to increase the share of renewable energy as part of the energy mix. In the current decade, we will see huge investment efforts in energy system expansion and modernisation, but they won't contribute meaningfully to the national energy until after 2030 due to long lead investment time in the energy sector.

Steering our portfolio

Residential real estate	
Outstandings in scope	€232 billion

Figure 14 Residential Real Estate Decarbonisation Pathway



54 https://www.calcasa.nl/media/default/pdf/calcasa_wox_2021k1.pdf

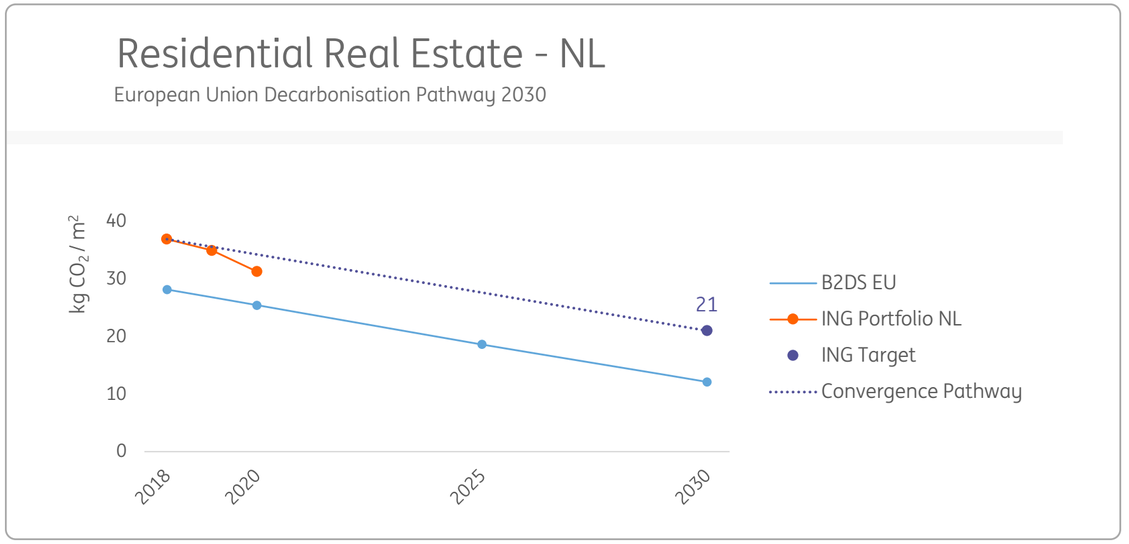
As was the case last year our carbon intensity measurement covers our Dutch and German mortgage portfolios, and also includes our Polish mortgage portfolio for the first time with a combined outstanding lending amount of roughly €192 billion (65% of total mortgage outstandings) and almost 1.3 million financed houses and apartments (referred to as homes). Later in the chapter we also provide an initial estimate from our Belgian portfolio, however, this has not yet been included in this chart, as the methodology used in Belgium to determine the energy intensity of homes is still under development.

In line with the recommendations of PCAF for mortgages, we continued to use energy labels as a proxy for the actual energy performance of the properties. Data on energy labels is publicly available in the Netherlands, but is not publicly available in Germany, Belgium or Poland. We have therefore continued to develop our own means of determining CO_2 intensity for homes in those markets based on other available data such as building year, modernisation and subsidised loans.

If we compare our 2020 performance with the pathway towards 2030, we are currently below the pathway by 2.1%, warranting a green status in our dashboard.

Netherlands

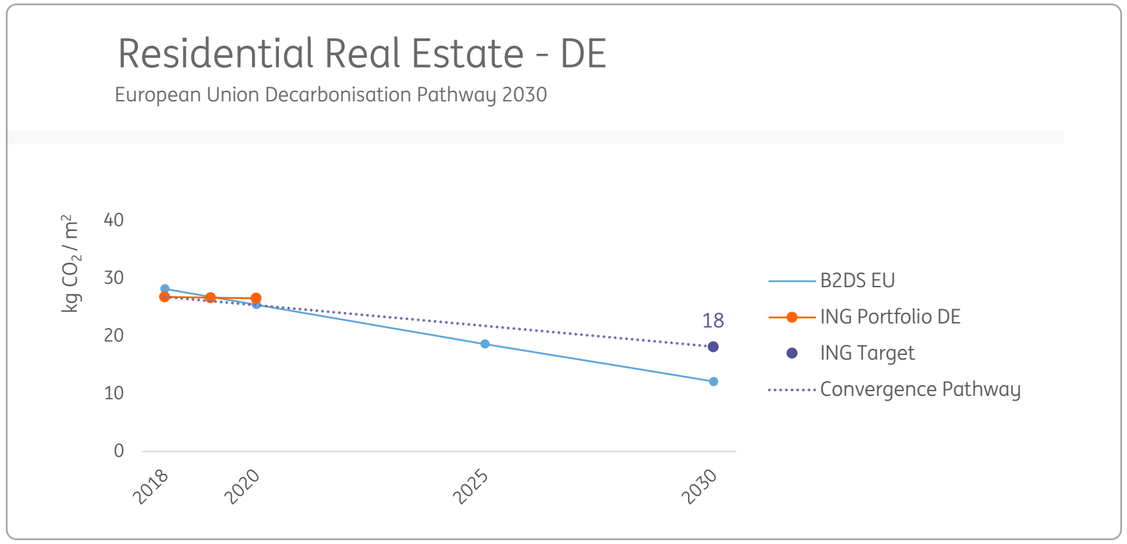
Figure 15 Decarbonisation Pathway 2030 for the Netherlands



In the Netherlands, our mortgage portfolio has made progress in improving the energy intensity, with a 10.5% reduction. This is 8.7% below our target trajectory. Our aim in the Netherlands is to reach 21kg CO_2/m^2 by 2030. Aside from our activities with customers (described below), some of the improvement this year comes from new build homes, which by default have green energy labels due to government regulation. One of the largest factors influencing this trend is the greening of our electricity net in the Netherlands, where renewables reached 26% in 2020 up from 18% in 2019, which has created a lower emission factor for electricity.

Germany

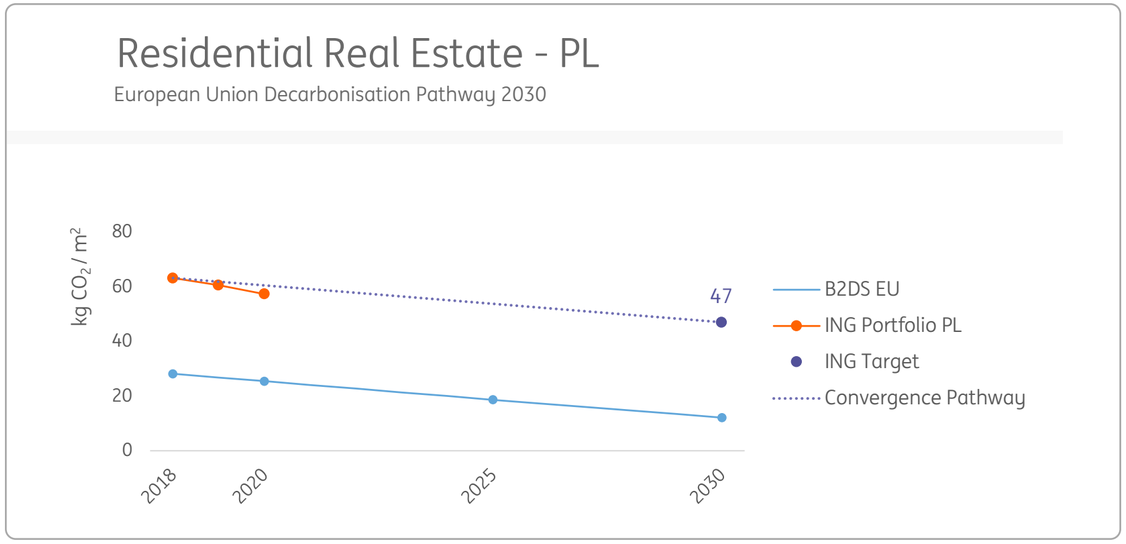
Figure 16 Decarbonisation Pathway 2030 for Germany



In Germany, we also made small progress, improving the energy intensity, with a 0.3% reduction. This is 4.7% above our target trajectory. Unlike for the Netherlands, the effect of decreasing emissions coming from a greener electricity net in Germany cannot be shown yet due to the lack of updated emission factors. Our aim in Germany is to reach 18kg CO_2/m^2 by 2030. Since there is no database for CO_2 emissions per building in Germany, a corresponding calculation was made based on our own research. In general, we see a greater differentiation of energy labels in Germany from A ++ to H. The renovation rate of the buildings will need to increase significantly if the goals set by the government for an energy-neutral building status are to be achieved. In order for ING to be in line with the pathway, we need to continue to create awareness of the issue and work on financial solutions. The effects of communication and other measures will not be seen immediately, but they will pay off in the long term.

Poland

Figure 17 Decarbonisation Pathway 2030 for Poland



In 2020 average annual energy demand for mortgages financed by ING in Poland amounted to 150 kWh/m^2. With an emission factor of 0,383 kg CO_2/kWh for the Polish energy mix in households, the CO_2 intensity metric for the Polish residential mortgages portfolio is 57 kg CO_2/m^2 a year, well below national average of 81 kg CO_2/m^2 a year. Due to the high carbon intensity of the Polish energy mix, this metric is almost twice

as high compared to the other markets and reflects specific local conditions. We were also able to back date our analysis to show how this has moved in the last three years, where progress has also been made, with a reduction of 9% during that time. This analysis covers 91% of our portfolio in Poland.

This year, for the first time, we have projected the future CO_2 intensity of our residential loans, estimated to be 47 kg CO_2/m^2 a year in 2030. There are many factors to consider in terms of the outlook for the future. We have a strongly performing mortgages portfolio with potential for further growth, but this is still sensitive to how the coronavirus pandemic develops. In terms of energy mix, there are official government plans to increase the share of renewable energy. Going forward, we intend to constantly improve our methodology, closely monitor all related factors and update our projection based on new developments.

Belgium

In Belgium, we were also able to map our portfolio for the first time, where we found the average energy intensity of our portfolio to be 87 kg CO_2/m^2. This analysis covers 100% of our portfolio in Belgium. We were able to calculate this via our partnership with Rockestate, a Belgian real estate valuation company. We applied the following methodology: we've matched average EPC values per province available in the Rockestate database with our own mortgage portfolio assets, leading to average EPC values related to homes. We have not included these results in the chart above as they are not using comparable metrics to those employed in the Netherlands, Germany and Poland. EPC data is not available publicly in Belgium, which makes it very difficult for lenders to understand the impact on this sector. The Energy Label systems are also different to those in the Netherlands, Poland, and Germany. In Belgium, one important difference is that these labels take into account the upstream production of energy in calculating the certificate per household, whereas in the Netherlands only energy consumed at the home site is considered. Therefore, we plan to include the results from Belgium separately until we are able to determine the onsite energy use data that will allow us to combine the data with data from other countries. The three regions in Belgium also show a diverse approach to establishing and sharing data on these labels, so more work is needed to find and use comparable data. Banks in Belgium are now mandated by the National Bank of Belgium (NBB) to capture EPC label data. We expect our approach will benefit from this over time.

Advising and financing our customers

Across our mortgage markets, we provide a range of products, services, and information to our clients to engage them on their sustainability journey.

Netherlands

In the Netherlands, in early 2020, we ran another activation campaigns on energy labels, following on from our first campaign in 2019. Aimed at energy labels D, E, F, & G, the campaign engaged our mortgage customers to provide a free energy label, giving homeowners insights into improving the sustainability of their homes. This partly resulted in the current status of more than half our portfolio achieving an energy label of either A, B or C, which are considered green in the Netherlands. It also showed that is hard to motivate people. Although customers weren't charged to take part, participation was limited. In the ING store, we also created a 'Sustainable living' tab with several customer offers, such as solar panels, and green energy contracts.

The government in the Netherlands also has a lot of initiatives to encourage consumers to green their homes, including a range of subsidies. One of these is the 'Warmtefonds' or Heat Funds, which ING joined as co-financier in May of 2021, contributing €50 million in financing. The fund provides loans on favourable terms to people who want to make their homes or buildings more sustainable. We also contribute our expertise, as we're the primary bank for larger housing associations in the Netherlands. About 1.2 million homes are owned by a housing association. We can advise associations on saving energy and can bring the fund's energy-saving loan to their attention. The fund, which started in 2014, has now provided approximately €600 million in financing to make real estate more sustainable. This is expected to double in the next three years.

Since April 2021, we have created an opportunity for customers to increase their mortgage without extra advisory costs to fund sustainable improvements. To keep costs as low as possible, we have also been a strong advocate for desktop taxation for these increases. We introduced the desktop valuation on 24 June at a cost of €69, including VAT. This limits the costs and helps homeowners with extra funding for these improvements.

All ING mortgage advisers in the Netherlands have now also followed the NIBE-SVV[55] training course on advising clients to make their homes more sustainable. Our advisers apply the skills and knowledge from this training in every applicable situation. In addition, we have informed mortgage brokers how they can further engage customers on this topic, in newsletters and in conversation with our relationship managers.

Germany

In Germany, we use multiple customer touchpoints to inform our clients about the importance of energy efficiency, modernisation and sustainable housing. One example is the so-called 'WissensWert' ('Worth Knowing') articles, where we shared various articles on 'Energy Consulting' to help inform our customers. A sustainability page has also been added to the homepage. The page appears only when interested parties search for sustainability keywords in search engines. The page is intended to give potential mortgage customers an overview of the energy-efficient living options.

Currently, we are evaluating the results of customer research conducted on customer preferences and needs with respect to energy efficiency and sustainable housing. In accordance with our guiding principle of customer centricity, we are investigating features and services that would encourage the take-up of a sustainable mortgage product, establish pre-existing knowledge on the subject as well as an interest in specific additional information. Based on the insights we generate through this research, alongside other initiatives, we plan to create an MVP green mortgage product.

In 2021, we launched a promotion for new buildings that offers an interest rate discount of -10 bp on mortgages if our customers either build new or purchase a new build from a developer. The aim is to increase the share of energy-efficient new builds in our portfolio and at the same time support our Sustainable Housing strategy. The promotion was marketed as a climate-friendly campaign. Customers who purchase energy-efficient new builds can enjoy an interest rate discount.

55 NIBE-SVV is the largest trainer for professionals from the financial services industry in the Netherlands.

In addition, we would like to mention our collaboration with KfW, a state-owned development bank. Firstly, we are integrating a new set of KfW subsidy programmes with a focus on financing energy-efficient real estate in our product offering at the beginning of July 2021. These programmes subsidise the construction, acquisition and modernisation of energy-efficient real estate as well as individual measures to improve the energy performance of a property. Based on a range of criteria and depending on the respective KfW-programme, each residential unit can receive between €60,000 and €150,000 to implement measures to improve its energy performance. Furthermore, these KfW programmes provide support by offering a repayment subsidy of between €37,500 and €75,000 and by bearing as much as 50% of the cost of an energy-efficient heating system.

In addition, we have recently launched an MVP version of a modernisation calculator for residential buildings in collaboration with KfW. The tool provides suggestions for sustainable renovation measures based on the present condition of the house. Moreover, the output informs the homeowner about the potential costs as well as the potential savings over time by implementing each suggested measure. Lastly, the tool refers to appropriate subsidy programmes to help finance the respective measure. For the MVP phase, which is intended to take six months, the scope is limited to a selected group of consultants in our direct sales team to generate customer feedback on the tool and the process. Ultimately, we hope to be able to scale this initiative to provide a benefit to the whole market and to support other regarding sustainable housing efforts.

In view of the increasing regulatory requirements, the improvement of our data management continues to play an important and bigger role. To improve our data management in the future and to be taxonomy-compliant on the road, preparations are underway to implement the energy certificate in our systems as a minimum document for submitting applications. The aim is to ensure that by 2021 customers and brokers will have to submit energy certificates for new business and that the real data on the energy class will be stored.

Poland

In 2020, ING Poland continued to offer an ECO Mortgage Loan which customers can use to finance an energy-efficient home where the demand for usable energy for heating and ventilation does not exceed 40 kWh/m² per year. It is a product for customers who include technological solutions during construction that allow for a reduction in usable energy consumption. The loan is offered with attractive conditions, including no commission for credit granted. At the end of 2020, around 2,200 eco loans had been granted. Since 2Q 2021, ING in Poland has also started to collect data on primary energy use. We hope to be able to extend our ECO mortgage offer and encourage customers to choose ECO solutions.

In 2019, ING Bank Hipoteczny issued its first green covered bond. Proceeds from the issue were used to refinance real estate among the top 15% most energy-efficient buildings in Poland. In 2020, the Climate Bonds Standard Board approved the Post Issuance Certification for this issue.

> Mortgages constitute a large part of our loan book. At the same time buildings significantly contribute to global CO_2 emissions. Our role, as a financial institution, cannot be underestimated. Empowering our mortgage customers is critical to reaching the collective goal of net zero."
>
> – Brunon Bartkiewicz, CEO, ING Bank Śląski, Poland

Belgium

In Belgium, we offered clients an Eco-Renovation loan for energy reduction renovations to their homes. Eco-renovation loans are used when at least 80% of the amount borrowed is to be spent on energy-saving projects, such as replacing water boilers, installing solar panels, double-glazed windows, or insulating floors, walls, and roofs. The loans incentivise customers by offering a lower interest rate.

In 2020, 28% of euro renovation loans granted by ING in Belgium were eco-renovation loans. On top of this, in early 2021, the regional government in Flanders launched a specific Flemish renovation mortgage loan, offering a 0% interest rate subsidised by the government if several conditions are met. This measure has so far not resonated strongly with customers, as it can be difficult for them to meet the acceptance criteria. A commercial campaign was recently launched to promote the initiative and similar offers are also being explored in other regions of the country.

We continued to engage customers with advice about sustainable housing on our external website, on topics from EPC labels to subsidies for energy-efficient double glazing. We actively promoted this content to customers through our social media channels.

We also continued our work as part of the Febelfin Task Force on sustainable housing, where we are collectively looking for solutions across banks in Belgium. Topics considered by this group include innovations in renovation loans and how to best approach collecting EPC label data.

Managing climate and environmental risks in residential real estate

In 2020, we conducted a pilot analysis on the implications arising from physical hazards in our mortgage portfolio. The pilot assessed the potential impact of climate hazards on 30,000 European post codes, representing 60% in outstanding from our mortgage portfolio. Of the climate hazards assessed, the greatest risk was associated with flooding, which was more prominent in Western European countries (such as the Netherlands, Belgium, and Germany – INGs largest mortgage markets), where there is a noticeable difference in severity of flooding if we compare the present day to 2050. The analysis showed that most properties will be impacted by climate change but the extent of the impact will vary.

Since then we have continued to build our approach with the intention of mapping our entire global portfolio, to identify the risks on a more granular level, and to begin to understand their respective financial implications for ING. Following this, we have used the initial pilot experience to develop our partnership approach to measuring these risks in our mortgage portfolio to have a physical risk assessment, not only at post code level, but also at an individual property level. We are working with suppliers to determine the best approach to data collection, and are looking forward to making further progress in the months ahead.

In 2020 we also conducted a high-level internal heat-mapping exercise, which indicated a relatively low transition risk associated with INGs residential real estate portfolio. These included risks such as policy interventions to mandate certain energy labels, or technology adaptations which may not be able to be used in all buildings. We continue to analyse these risks towards specifying the impact of transition risk further.

We also continued to participate in the Energy Efficiency Financial Institutions Group (EEFIG) working group on risk assessment, to further investigate how to establish the quantitative implications of such a risk. We continue to note the importance of correct energy label data as a key factor in how we determine both alignment and risk when it comes to our portfolio. As certain transition risks start to materialise, it will be even more critical for governments to standardise these systems and prioritise a data ecosystem that ensures labels are widespread, accurate and up-to-date.

Next steps

- We aim to share our sustainable housing strategies for ING in the Netherlands and Germany. These strategies are important to bring together initiatives focussed not only on products, but also on customer engagement and services to support their transition journey.
- We will continue to use our customer engagement channels to better inform customers on the benefits of sustainable housing and energy-efficient renovations beyond pure cost-saving considerations.
- We will continue to improve our methodology and increase the scope for countries included in the reporting.
- We will continue to partner and work with stakeholders such as KfW and Warmtefonds to support government-backed programmes and financing to reach customers.
- A working group has been established to further build our approach to managing climate risks in our Retail Banking markets. Country representatives from our key mortgage markets are included in the working group, and are working to embed climate risk.

Construction

Construction

The construction value chain is directly or indirectly responsible for almost 40% of global CO_2 emissions from fuel combustion and 25% of GHG emissions overall[56]. Specifically, each year, more than four billion tonnes of cement are produced, accounting for around 8% of global CO_2 emissions, more than Germany, France and the UK combined[57]. Being the most commonly used man-made material on the planet, there is a major opportunity to consider and address the impact of this critical material.

The multi-step production process for cement is very energy-intensive and CO_2 emission-intensive as it involves the decomposition and calcination of limestone (sintered with other materials), creating clinker (in high-temperature kilns where the majority of emissions occur), which is then ground with other components. Around 60-70% of the total emissions in the process are created when the limestone is converted to calcium oxide, with the remaining 30-40% coming from the combustion of fossil fuels.

"Our recently established Construction Sector allows us to stay close to our clients across the value chain to accelerate their sustainability transitions. With a current major focus on Cement as the most material area for impact, we look forward to working with our clients to help them achieve net zero."

– Michele Monterosso, global lead of Construction

56 Seizing the decarbonization opportunity in construction | McKinsey
57 https://www.chathamhouse.org/sites/default/files/publications/2018-06-13-making-concrete-change-cement-lehnepreston-final.pdf

In 2020, ING strategically decided to organise all its institutional business connected to the construction value chain under the Construction Sector umbrella. The sector has been organised around four identified subsectors: cement, other building materials, construction/contractors, and engineering services.

With more than 100 institutional clients and corporates, ING is active across the global construction value. It operates in the four clusters listed above, each with different priorities in transition and commitments to reduce CO_2 emissions. In this section of the report, we specifically focus on cement within the scope of Terra as the largest contributor to emissions within this broader sector.

Cement

Sector outlook

Urbanisation trends and the demand for both new construction and refurbishments will stay strong and will continue driving the construction value chain as well as the demand for cement as a core building material.

The decarbonisation of cement requires large investments in new technologies and innovations that only a few of the larger players can afford. These investments do not have an immediate pay-off and require the adequate tracking of progress on transition to ensure investors' appetite

Contrary to other sectors, this can be extremely granular, and the cement subsector is dominated by very large players. There is a high level of sophistication scalability in technologies. New financing solutions can be also scaled rapidly across dominant players and an acceleration in sustainable finance solution is expected globally, with effective performance tracking capable of attracting a wide range of investors.

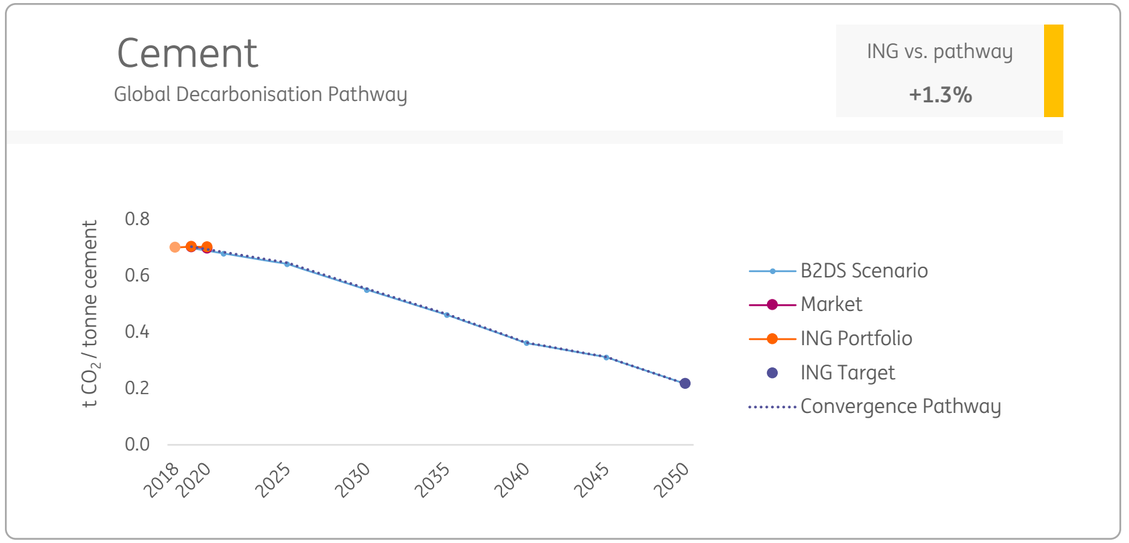
Intense industry CO_2 emissions are balanced by a long or longer life span of buildings, infrastructure and civil engineering projects, as well as by circular economy opportunities in the industry. CO_2 reductions from the cement industry up to 2050 are expected to come from carbon capture and storage (CCS), a central plank of the decarbonisation strategies of major industry players. 3D printing is also expected to be a major driver for scalable building solutions with a reduced carbon footprint.

Steering our portfolio

With a 2020 loan book of €510 mln in outstanding amounts (-18% YoY), the cement subsector represents approx. 16% of INS's total exposure to clients active across the construction value chain.

Construction	
Outstandings in scope	€510 million

Figure 18 Cement Decarbonisation Pathway



The 2020 results for our cement book show a slight decrease in CO_2 intensity year-on-year, now standing at 1.3% above the convergence pathway. We are confident that we can meet the long-term target to align with the B2DS scenario in 2050 by reducing emissions intensity by 69% compared with 2018. ING's emission intensity for the cement loan book stands at 0.7042 at year end 2020, slightly lower compared to the emission intensity of 0.7045 calculated at year end 2019. ING's position is slightly higher than, but still very much aligned with, market averages (respectively 0.7038 and 0.6997 in 2019 and 2020).

In 2020, there were significant improvements in the granularity of the data used to measure our portfolio and the market. To properly compare our 2020 portfolio with the 2019 portfolio, we restated the 2019 portfolio using the most up-to-date data available.

While restating the 2019 ING portfolio, we also restated the 2019 market to make a fair comparison with our portfolio. Because the data was not granular enough in 2018, we were not able to restate the 2018 market figure. For this reason, the scenario starting point is now 2019 (the scenario starting point equals the market position).

Advising and financing our clients

ING remains committed to working with our clients in the construction sector to achieve their sustainability ambitions, including our cement subsector clients.

We aim to further strengthen our relationship with the top global players in the industry, investing a substantial percentage of their turnover in research and innovation. Sustainability and transition are key priorities for advising these clients. We intend to work alongside them to intensify our strong commitment to a clear decarbonisation agenda, matching our medium and long-term goals. Our advice ranges from sustainable finance products to long-term and innovative solutions, and sustainability KPIs that we can advise them to embrace.

Following on from our engagement, ING continues to extend our various sustainability products to our cement clients, such as our sustainability improvement loans and bonds. For example we are very proud to have been ESG structuring advisor and active bookrunner for a €850 mln sustainability-linked bond (SLB) issued by Holcim. Via the bond, Holcim pledges to reduce the CO_2 intensity in cement down to 475kg CO_2/tonne by 2030, when the target will be validated by the Science Based Target initiative (SBTi). The SBTi, a partnership between CDP, the United Nations Global Compact (UNGC), World Resources Institute (WRI) and the World Wide Fund for Nature (WWF), helps companies set greenhouse gas emission reduction targets in line with climate science. This is a good example of something tangible to make sure our clients' commitment is tracked and capable of raising a significant appetite from investors. This SLB was the very first bond in the cement industry and we are convinced this model will be rapidly scaled.

Regarding global clients active in the light building material space, ING has been involved in several transactions in early 2021. Specifically we acted mandated lead arranger in the €600 Mln RCF completed by Rockwool Group, a multinational manufacturer of mineral wool products and insulation solutions. In this case the credit facility is directly linked to sustainability goals on emissions, recycling and waste. We also acted as bookrunner and mandated lead arranger in the €700 mln RCF signed by Kingspan Group, a global leader in high-performance insulation and building envelope solutions, where the facility pricing incentivises the company to achieve sustainability commitments.

Other best practices and examples of tangible commitment recently shown by our most relevant clients are several efforts in pioneering new and less CO_2-intensive technologies such as 3D printing. HeidelbergCement provided material for the first 3D-printed residential building in Germany, constructed on site by another client serviced by ING: PERI. The new technique means that the building material has an approximately 70% lower footprint compared to traditional cement, with less time spent on site printing/machineries. HolCim also provided significant innovative solutions in the first ever 3D printed school in the world, a project realised in Malawi with technology able to build walls in less than one day. The technology is expected to be scaled, plugging the gap for infrastructure and civil engineering requirements in a sustainable way.

Managing climate and environmental risks in construction

Finally, ING is working on an analysis aimed at forming an adequate climate risk appetite framework for the Construction Sector, taking into account impacts by several environmental and climate risk drivers. A heat map analysis was conducted in early 2021. On top of significant pollution and waste challenges, medium impacts from other risk drivers such as extreme weather, chronic weather patterns, water stress, resource scarcity and biodiversity loss are taken into account. Our next steps will be to quantify these identified risks and to inform our construction strategy and risk appetite further.

Next steps

- Following a recent strategic decision to organise ING's institutional business across the construction value chain, we will leverage our global footprint further to intensify dialogue aimed at proactively addressing different sustainability and transition priorities of more than 100 clients across the four clusters.
- As far as Cement is concerned, we will continue the extremely selective approach recently adopted, avoiding opportunistic transactions and focussing on scaling sustainable finance and innovative solutions with existing global players capable of pioneering and expanding innovative solutions, while strictly tracking progress in respective decarbonisation paths.
- We will continue to develop our approach to climate and environmental risk management in this sector.

Metals and mining

Metals and mining

The metals and mining sector is critical to underpin the energy transition and to meet increased demand for things such as batteries, electric vehicles, and renewable sources of energy. Yet the sector itself also has an important role in minimizing its own emissions and impact on the environment. At ING we are strongly committed to supporting those companies in the sector that are improving their own sustainable working practices and those that are playing a role in the broader energy transition.

The theme of sustainability strongly resonates with companies in the metals and mining industry as they have been grappling with these issues in their day-to-day business. More and more companies in this sector have come to realise that the only way to be economically viable is to operate in an environmentally and socially responsible way.

At ING we are strongly committed to a greener, more sustainable future, and therefore provide advice and finance to companies in this sector to help improve energy efficiency, reduce GHG emissions, and reduce water consumption. This includes companies mining for raw materials and companies involved in smelting and refining activities.

"We see a strong engagement from the sector to map out and build a path to net zero. We have seen a wide adoption of renewable energy sources, interest in electrification of equipment. In the steel segment we see an acceleration of momentum with several green steel projects being started up and many clients setting specific decarbonisation targets. We are committed to work with our clients as well as wider stakeholders to facilitate the transition for this essential sector."

– Arnout van Heukelem, global head of Metals, Mining & Fertilizers

Steel

Steel is a widely traded commodity which is critical to modern society. It accounts for roughly 8% of final energy use and 7% of global CO_2 emissions[58]. On an annual basis, 1.9bn tonnes of it are produced at an average CO_2 intensity of 1.83t of CO_2[59]. Production volumes have grown by 32% since 2010[60] and it's likely that global demand will continue to climb until at least mid-century as developing economies emerge.

The use of steel is critical to modern society. It is important to almost all aspects of our daily lives, from houses, to automobiles, washing machines, pipes and so-on. Its characteristics of strength, usability, durability and reasonable cost, mean that there are currently no substitutes for it. Hence, the phasing out of steel use is not an option, and decarbonisation is necessary.

Increasingly, technologies for decarbonisation are becoming available, however, some of them still require greater maturity. Subsequently, significant investments will be required to decarbonise the sector between 2021 and 2050. According to one estimate, the investment required could exceed $900bn[61].

Most steel emissions come from the blast furnace (BF) process, where temperatures in excess of 1,100-1,600°C are required to reduce iron ore. This BF process is currently the prevailing (~66%) method of steel production. On average, energy efficiency improvements could drive approximately 15-20% reductions in present energy usage

58 Source: IEA (2020), Iron and Steel Technology Roadmap, IEA, Paris https://www.iea.org/reports/iron-and-steel-technology-roadmap
59 Source: Worldsteel.
60 Source: Worldsteel.
61 Source: MPP Steel Transition Strategy.

globally, however, many OECD-based steelmakers are already nearing the theoretical efficiency limits of current blast furnace technology.

In addition to the BF process, a low-carbon steel production process is already available – using Electric Arc Furnaces (EAFs) typical emissions are ~0.5t of CO_2 pt of crude steel (versus 1.9 – 2.3t pt in the BF process), depending on the composition of the electricity grid. Historially, EAFs have mainly used recycled scrap steel (as opposed to iron ore), which has two constraints: (i) there is currently insufficient scrap availability to cover steel demand (the latest projections by the IEA indicate that by 2050 roughly 50% of total steel production could be produced using scrap); and (ii) not all steel grades can be produced using scrap, given the impurities that are inherent in scrap. As such, the focus for the steel industry should be on decarbonising the production of primary (i.e. iron ore-based) steel.

Currently, there are two major routes envisioned for the decarbonisation of steel. The first foresees a change in the way iron ore is reduced. While the BF process uses coal, the DRI, or Direct Reduction Iron uses natural gas which is less CO_2-intensive than coal. Moreover, the DRI process can be altered to use hydrogen instead of natural gas, so that when green hydrogen becomes abundantly available, steel can be made from iron ore without incurring significant CO_2 emissions (subsequently steel can be produced in an EAF). Examples of these processes are what Hybrit and H2Green Steel are doing in Sweden.

The second major path to decarbonisation is through the capture and storage of CO_2. The reason why this is seen as attractive is that significant investments have been made in the current BF production infrastructure. Retrofitting these with carbon-capturing technologies may currently be economically more attractive. Moreover, there is limited visibility on the timing of the availability of hydrogen, and green hydrogen in particular.

In addition to these two major paths, there are many intermediate pathways imaginable, which can lead to lower carbon emissions over the next five to 10 years. However, as indicated above, both paths to net zero CO_2 steel will require immense investments.

Sector outlook

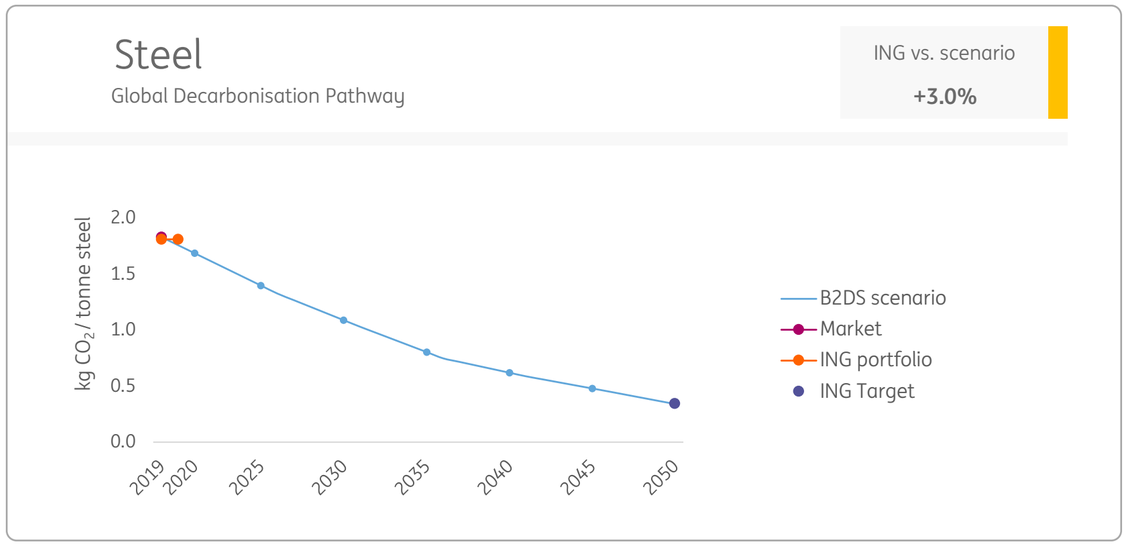
The steel industry is a highly cyclical industry which is characterised by relatively low margins as a converter between powerful suppliers and offtakers. Currently the industry is experiencing a very significant upcycle, due to the strong economic rebound following coronavirus. The conversion to net zero production methods will require significant investments between now and 2050. While this in itself is already difficult for steel producers, the uncertainty of applicable regulation makes it even more challenging.

Many governments have called for net zero 2050 commitments, without putting a proper policy framework in place. Of importance for the steel industry specifically is clarity around carbon pricing and (where such carbon pricing is applied) a carbon border adjustment – to facilitate a level playing field. Clarity around these measures will support investments as it will allow steelmakers to make stronger business cases, driven by carbon pricing. In addition, public support for investments via the ECA framework, for example, would go a long way to helping steel companies obtain financing for specific investments.

Steering our portfolio

Steel	
Outstandings in scope	€2.1 billion

Figure 19 Steel Decarbonisation Pathway



ING's portfolio is slightly outperforming the market, with an emission intensity of 1.81 vs. 1.83 kg CO_2/tonne of steel. Compared to the global B2DS scenario, we are slightly above by 3.0% in 2020. The carbon intensity of our portfolio has remained flat year on year, and the portfolio composition has not significantly changed. In order to align with the scenario in 2050, our portfolio will need to reduce emission intensity by 81%.

Please note that we have slightly restated the carbon intensity of our portfolio as reported last year from 1.80 to 1.81/t, due to a change in data sources. This year, our reporting is based on publicly available data on Scope 1 and 2 emissions made by steel companies. While this data is now published by most steel companies, not all companies are doing this. As such we have been able to report on 84% of our overall outstandings.

As reporting on lending portfolio intensity becomes more prevalent, it is also important to make sure that lenders have clear, comparable and standardised data available to them. This will allow them to report in an accurate way on the intensity of their portfolio, and allow them to make better informed lending decisions when considering CO_2 emissions of steel companies.

To this end, ING has taken up a leading role in the Climate Aligned Finance Working Group, which consists of five other large international lenders in the steel space, and is supported by the Rocky Mountain Institute. The working group is part of the broader Net Zero Steel Initiative. The Working Group will create an industry agreement modelled after the shipping sector's Poseidon Principles.

The deliverables for the working group are (i) a credible net zero pathway for steel by 2050; and (ii) a standardised methodology for reporting CO_2 emissions for steel companies and alignment for financial institutions. The Working Group aims to finalise the roadmap and methodology by September 2021, and launch the agreement by November 2021. Due to these timelines, we have not yet defined our convergence pathway. We plan to implement the new methodology as well as show the pathway in our next report following the completion of the Working Group's deliverables.

Advising and financing our clients

Decarbonisation has been part of our dialogue with clients in the sector for some time already. Sometimes this dialogue has been marred by the lack of a widely available roadmap for steel decarbonisation, however, over the past twelve months we have seen growing interest from steel companies in concrete decarbonisation action as well as green and sustainable financing solutions. Examples of these include the sustainability improvement loans for ArcelorMittal, MetalloInvest, NLMK and US Steel that have been closed over the last twelve months.

For US Steel we acted as joint sustainability structuring agent for two ABLs for its US operations, where the margin was linked to its performance in carbon emission reduction, safety performance and the certification of production sites by Responsible Steel. This aligns well with US Steel's net zero target for 2050.

It is also clear that more investment is becoming concrete to reach net zero. Europe now counts three commercial scale green steel projects in development: Hybrit in Sweden, Sestao (of ArcelorMittal) in Spain and H2Green Steel in Sweden. All three of these are scheduled to come online during the mid 2020s.

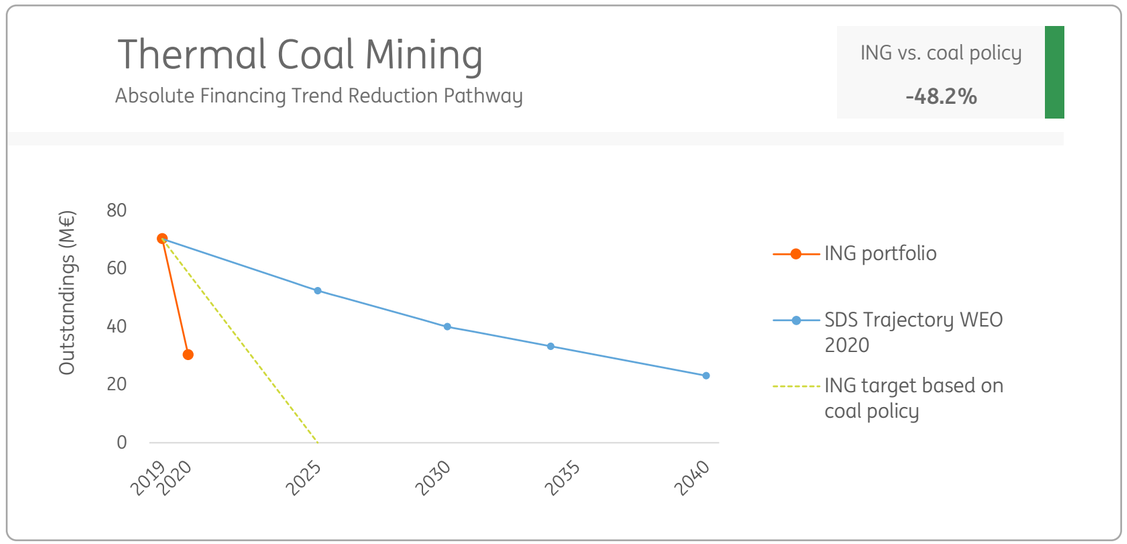
Next steps

- We will continue to work with Climate Aligned Working Group under the Net-Zero Steel Initiative. The next steps are the finalization of the methodology and the actual agreement. The aim is to present the agreement (or an advanced draft) at COP 26 in November, after which banks will have the opportunity to sign up to it. We then expect that implementation will take another 6 – 12 months, and expect that ING will start reporting under this methodology next year.
- In regards to green steel projects, we expect more of these types of projects to move to more concrete planning stages over the next twelve months, where we will be in close dialogue with our clients on how to support them.

Thermal coal

Thermal coal	
Outstandings in scope	€30.4 million

Figure 20 Thermal Coal Mining Financing Reduction Pathway



Next to steel, we also track our climate alignment for thermal coal mining. The graph above shows the 'Portfolio financing trend' for our thermal coal mining exposure, referenced to the SDS Global trajectory. However, in line with ING's policy to reduce our portfolio exposure to thermal coal mining (and coal-fired power generation) to close to zero by year-end 2025, ING's target is far more ambitious. Since the stricter coal policy was introduced the exposure to thermal coal mining has reduced from €316 million in 2017 to €30 million at year-end 2020.

Managing climate and environmental risks in metals and mining

The metals and mining industries are extractive industries, and have some inherent level of impact for the environment. But these sectors also play a key role in creating jobs and providing core materials that will drive the energy transition. Overall transparency, ESG and Sustainability trends in the industry have accelerated significantly and should help the industries meet this core challenge: to deliver the global demand for metals and minerals while managing overall impacts well for the climate and environment.

With regard to our climate alignment, we focus specifically on the Steel Sector as one of the larger emitting areas. When we discuss our approach to climate and environmental risk management, this covers the full Metals & Mining Sector.

Environmental and Social Risk

The industry faces a number of environmental and social risks given the nature of the operations and need to earn its social licence to operate from local stakeholders, host governments and NGOs to be successful. From a risk tolerance identification, mitigation and acceptance perspective, we have developed a strong in-house understanding, due diligence standards and policy framework together with our ESR teams to manage these risks for over 15 years.

ING's Environmental & Social Risk Framework governs the ESR risk appetite and transactional decision process and has a dedicated section on metals & mining. Many transactions in the sector require additional due diligence and ESR advice, often a direct consequence of the overall industry risks and higher risks associated with the host countries in which companies operate.

As part of our ESR policies and overall metals & mining strategy, ING encourages clients in the sector to seek continuous improvement in environmental impacts, and health and safety management. Best practices for these are explicitly listed in the policy and regularly updated.

Climate and environmental risk

ING is actively involved in identifying the relevant physical and transition risks that the sector is facing and assessing the related credit risk to ING. The climate and environmental risks relevant for the subsectors within the industry have been identified as follows:

Table 6 Metals & Mining: sub-sector level outcome of climate-related and environmental risk heat mapping

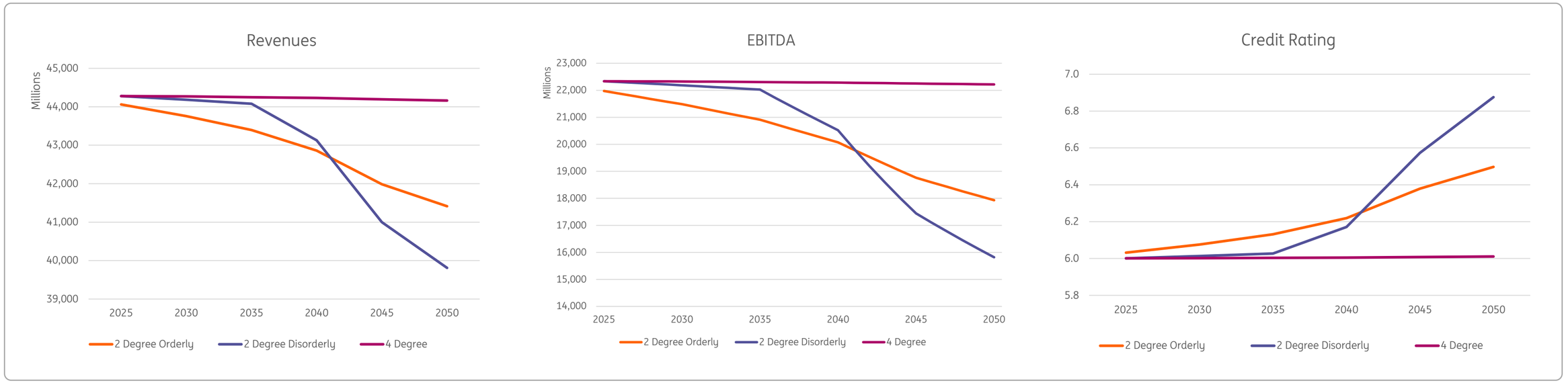
Metals & mining subsectors	Transition Risk	Physical & Environmental Risk
Metals manufacturing	Low – Medium	Medium
Metals mining	Medium	Low – Medium
Fertilizers	Low	Low – Medium

The physical and environmental risks that are relevant for the complete portfolio are already largely assessed as part of the existing ESR Framework and due diligence. Where we can build further knowledge, as identified in the ECB gap analysis and C&E risk identification, we are exploring solutions with external data providers to seek input on underassessed areas. This includes mapping expected changes in weather pattern or water availability for the locations of the operational assets of our clients.

There are two clear subsegments that carry most transition risk. Firstly aluminium, because its production is highly energy-intensive and energy costs make up a high percentage of the cost structure, and secondly, and perhaps more importantly, the steel segment. We are assessing transition risk at a transactional level for steel and aluminium transactions.

The metals & mining sector was also included in the Baringa proof of concept exercise on climate change scenario analysis. The exercise was insightful and fed our ongoing reflection on how to further define our strategic choices for the sector and how to manage our portfolio. The following charts[62] display a projection of the data for an example mining company in scope of the Baringa exercise. In the charts we see how the revenues, EBITDA, and credit rating of the company would evolve until 2050, under the three climate pathway scenarios modelled in the exercise[63]. The credit rating, shows the equivalent of a one-notch downgrade from six to seven on the scale. Important to note again, however, is that the model used in the exercise assumes that no climate transition strategies have been implemented by the companies during this time.

Figure 21 Scenario analysis pilot: example of data output



62 The graphs displayed do not reflect any one particular company or sub-sector and are for illustrative purposes only.
63 See section on Climate Risk for a description of the scenarios.

Technical appendix

Terra Approach

Conceptual building blocks for target-setting

To set climate alignment targets, two key building blocks are needed. Firstly, granular client-level insights and measurements are vital for decision-making and client engagement. Secondly, a normative benchmark is required to guide decision- making towards an intended outcome (e.g. climate scenario or target).Therefore, there are two types of methodologies associated with the above-mentioned building blocks:

1. a measurement methodology that identifies and allocates client-level data to a financial portfolio; and
2. a methodology that applies a scenario or target to that portfolio to set targets.

Arriving at a CO_2 intensity metric per sector

The CO_2 intensities displayed in the Climate Alignment Dashboard are calculated by applying different measurement methodologies (see Table 8). Details of the methodologies applied in the Terra approach can be found in the source documentation, which is shown in Table 8. This Technical Appendix therefore does not expound on the methodologies themselves, but rather provides an overview of which methodologies are applied to which sector, which choices are made within the application of those methodologies and the data sources used as inputs.

For detailed information about calculation approaches and methodological underpinning for the fossil fuels, power generation, automotive, aviation, cement and steel sectors, please refer to the PACTA for Banks methodology paper and the Katowice Banks application paper. For the shipping, residential real estate and the commercial real estate sectors, please refer to the Poseidon Principles, the PCAF report and the Delta plan Duurzame Renovatie respectively.

Limitations of the CO_2 intensity metric

While converting the sector economic activity output to CO_2 intensity per unit of production provides a clear and simple way of demonstrating our current portfolio composition relative to the benchmark, we acknowledge a number of limitations that are inherent to this conversion.

Any use of average emission factors or conversions from capacity to production based on estimates means introducing less accurate input, which will reduce the precision of the results. Furthermore, intensity metrics do not provide the full picture.

It is also critical to note that data and methodologies are continuously improving. ING publishes on the basis of the best available data and most suitable methodologies and methodological choices for our portfolio and we do so on a best- effort basis. Any calculation errors or updates as a result of methodological changes or new information that lead to materially different outcomes than previously reported will be addressed and restated in subsequent reports. The results are currently not audited.

PACTA – 2˚ Investing Initiative (2DII)

2˚ Investing Initiative

The 2˚ Investing Initiative is an international non-profit global think tank on developing climate and long-term risk metrics and related policy options in financial markets. It's backed by bodies including the European Commission and various European governments, and supported by academics, expert groups and civil society.

PACTA application for steering

The PACTA methodology currently provides client-level, forward-looking analysis for the full range of PACTA analysis at client level. This includes the volume analysis (or production capacity build-out projection) of each technology and how this compares to what it should be to align with climate scenarios, as well as the forward-looking technology mix of the client based on the CAPEX plans of each client and how these compare to the climate scenario requirements. We are then able to provide clients with these insights and how they compare to peers and the market within this context. These insights can be useful for client engagement and steering. The technology mix and volume analyses are further elaborated upon in the respective methodology papers.

Table 7 Summary of choices available in PACTA made by ING

Methodology steps	Options in PACTA*	ING's choice
Scoping		
Financial products and services	▪ In principle, the methodology applies to all financial products. But for some products (e.g. derivatives) the link with the real economy can be more tenuous and require more thought about its application at this stage.	▪ Term loans and Revolving Credit Facilities
Exposure type	▪ Capital exposure ▪ Client relationship	▪ Capital exposure
Financial indicators	▪ Net commitment/nominal amount ▪ Gross commitment including guarantees ▪ Gross commitment ▪ Drawn amount ▪ Exposure at default (EAD) ▪ Credit limit	▪ Drawn amount (outstandings)
Sector segmentation	▪ Primary activity ▪ Revenue weighted (not automatic)	▪ Primary activity ▪ Revenue weighted for the energy sector if data is available
Measuring indicators		
Types of indicator	▪ Volume ▪ Technology mix ▪ Emission intensity	▪ All used + ▪ Financing indicator (trend and mix)
Allocation rule	▪ Unweighted approach ▪ Portfolio weight approach ▪ Balance sheet weighted approach	▪ Portfolio weight approach
Benchmarking		
Alignment approach	▪ Convergence approach ▪ Trajectory approach	▪ Convergence approach for physical indicators and trajectory approach for financial indicators
Choice of benchmark	▪ Economy as a whole ▪ Regional subset ▪ Institutional subset	▪ Regional subset (world, OECD, Europe) ▪ Institutional subset (corporate economy)

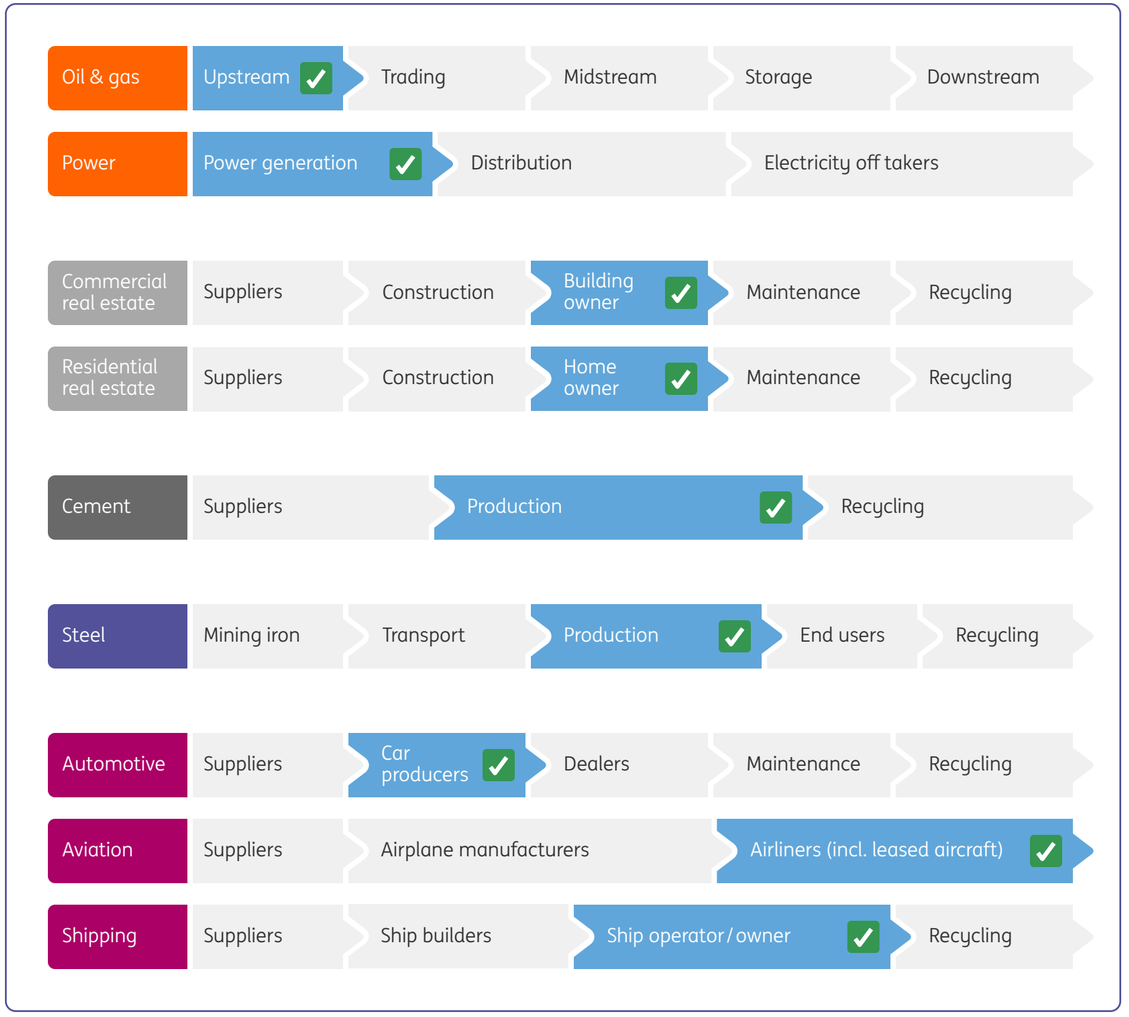
* Source: Credit Portfolio Alignment – An application of the PACTA methodology by Katowice Banks in partnership with 2DII.

Data sources and Scoping

To produce the Terra results, three types of data were used:
1) the bank's lending portfolio for the sectors in scope,
2) external databases and
3) climate scenarios and the technology pathways they provide, or in the absence thereof, GHG intensity targets.

Terra focuses on the most climate-relevant sectors, measured by global carbon footprint (sectors globally responsible for approximately a combined 75% of total emissions). Within each sector, we look at the part of the value chain that generates most of the climate impact and that relates to the scenarios applied. For example, within the power sector, how power is generated is what matters most – whether it's produced using renewable energy technology or by fossil fuel combustion. In automotive we focus on car manufacturers rather than part suppliers. Figure 22 shows each part of the value chain in scope for Terra as identified by the relevant group of NAICS codes.

Figure 22 Portfolio Scoping



Regionality

Climate scenarios may be applied at global or regional level (if available), depending on the sector. Automotive, for example, is a global business whereas technologies used for power generation vary considerably by region (OECD, EU, non-OECD; as defined by IEA), with each having regional targets and so clients will be analysed within these boundaries.

Product scoping

The product types in scope are those that most accurately represent lending on a continuous basis and thus balance sheet allocation within our loan portfolio, currently: revolving loans and term loans, each based on loan outstandings. Within these two 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 group, including the parent; 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).

Table 8 Overview of Approaches Applied, Output Types and Data Sources

Sector	Terra Toolbox of Methodologies			Data sources						Scope
	Measurement Methodology	Target-setting methodology	Reporting metric	Data as of year-end	Scenario	Market	Client-level external data	Emissions factors[12]	Conversion factors[13]	Sector value-chain
Power	PACTA[1]	PACTA	kg CO_2e / MWh (converted from technology mix)	2020	IEA[6] (WEO) SDS[7] 2020	Global Data	GlobalData	Asset Resolution	2Dii	Power generation
Fossil Fuels	2DII / Katowice Banks[10]	2DII / Katowice Banks	▪ Absolute € O/S ▪ Technology financing mix	2020	IEA (WEO) SDS 2020	Not available	GlobalData	Asset Resolution	2Dii	Upstream
Commercial Real Estate (NL)	Delta Plan	Paris-proof method	kg CO_2 / m^2 (based on EPC label distribution/ estimated consumption data)	2020	Plan bureau voor de leefomgeving (PBL), derivative of the Paris Agreement	CFP Green Buildings	Energy Performance of Buildings Directive (EPDB)	CFP Green Buildings	Not applicable	Homeowner
Residential Real Estate (NL/DE/PO/BE)	PCAF[2]	SDA (SBTi)[3]	kg CO_2 / m^2 (based on EPC label distribution/ estimated consumption data)	2020	IEA (ETP) B2DS[8] 2017	Not available	RVO (Dutch government agency)	Guidehouse (DE) / www.co2emissiefactoren.nl (NL) / Drees & Sommer (PL)	Not applicable	Building owner
Cement	PACTA	SDA (SBTi)	kg CO_2 / t cement	2020	IEA (ETP) B2DS 2017	Global Cement	Global Cement	Asset Resolution	Not applicable	Producers
Steel	PACTA	SDA (SBTi)	kg CO_2 / t Steel	2020	IEA (ETP) B2DS 2017	Steel Institute VDEh	Steel Institute VDEh	Asset Resolution	Not applicable	Producers

1 PACTA: Paris Agreement Capital Transition Assessment methodology of the 2° Investing Initiative, technology-based, utilising asset-level data.
2 PCAF: Platform Carbon Accounting Financials – carbon accounting framework which prescribes the use of building energy labels (EPC) as a proxy for CO_2 or energy consumption data for residential real estate.
3 SBTi/SDA: Science Based Targets initiative's Sectoral Decarbonization Approach – sets out sector decarbonisation pathways designed so as to be in line with IEA (ETP) B2DS scenario using intensity metrics.
4 The Poseidon Principles rely on the Annual Efficiency Ratio (AER) as the carbon intensity metric. The AER uses the parameters of fuel consumption, distance travelled, and deadweight tonnage at summer draught. Inividual ships are measured against the AER resulting in an alignment delta (AD) which therefore the distance from the required AER for each vessel.
5 Energy performance certificates (EPCs) are instruments that should contribute to the enhancement of the energy performance of buildings.
6 IEA: International Energy Agency.
7 SDS: Sustainable development scenario.
8 B2DS: Beyond 2 Degrees Scenario.
9 GHG: Greenhouse gases.
10 2DII (2 Degrees Investing Initiative) is the organization that co-authored the PACTA methodology.
11 AQR Asset Quality Review: shipping database, ships' IMO data.
12 Emissions factors: representative value that attempts to attribute the quantity of CO_2e released to the atmosphere to a given economic activity (e.g. ICE cars produced).
13 Conversion factors: factors used to convert one metric into another, for instance MW into MWh or cubic metres of gas into tonnes of oil equivalent.

Table 8 Overview of Approaches Applied, Output Types and Data Sources – continued

Sector	Terra Toolbox of Methodologies			Data sources						Scope
	Measurement Methodology	Target-setting methodology	Reporting metric	Data as of year-end	Scenario	Market	Client-level external data	Emissions factors[12]	Conversion factors[13]	Sector value-chain
Automotive	PACTA	PACTA	kg CO_2 / km (converted from technology mix)	2020	IEA (ETP) B2DS 2015 (retirement figures) & 2017	AutoForecast Solutions	AutoForecast Solutions	Asset Resolution	2Dii	Car producers
Aviation	PACTA	SDA (SBTi)	g CO_2 / pkm	2020	IEA (ETP) B2DS 2017	CIRIUM	CIRIUM	Asset Resolution	Not applicable	Airliners (including leased aircraft)
Shipping	Poseidon Principles[4]	Poseidon Principles	Average annual efficiency ratio	2019	IMO 2050 ambition	Not applicable	Poseidon Principles	Marine Environment Protection Committee 63/23 Annex 8	Not applicable	Ship owner/ operator

4 The Poseidon Principles rely on the Annual Efficiency Ratio (AER) as the carbon intensity metric. The AER uses the parameters of fuel consumption, distance travelled, and deadweight tonnage at summer draught. Inividual ships are measured against the AER resulting in an alignment delta (AD) which therefore the distance from the required AER for each vessel.

12 Emissions factors: representative value that attempts to attribute the quantity of CO_2e released to the atmosphere to a given economic activity (e.g. ICE cars produced).

13 Conversion factors: factors used to convert one metric into another, for instance MW into MWh or cubic metres of gas into tonnes of oil equivalent.

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

Table 9 TCFD Recommendations Table

TCFD Recommended Disclosures			ING Chapter Reference	ING Section Reference		
Governance	a	Describe the board's oversight of climate-related risks & opportunities	Our Integrated Climate Approach	Enablers to our climate approach	Effective governance & performance culture	p. 15, 16
			Managing climate & environmental risks	Our progress	Governance	p. 43, 44
			Energy	Managing climate and environmental risks in the Energy sector	Governance & risk appetite	p. 62
			Transport & Logistics	Managing climate and environmental risks in the Transport & Logistics sector	Governance & risk appetite	p. 82
	b	Describe management's role in assessing and managing climate-related risks & opportunities	Our Integrated Climate Approach	Enablers to our climate approach	Effective governance & performance culture	p. 15, 16
			Managing climate & environmental risks	Our progress	Governance	p. 43, 44
				Next steps		p. 47
Strategy	a	Describe the climate-related risks & opportunities the organisation has identified over the short, medium, and long term	Our intergrated climate approach	How we contribute to the world around us		p. 18, 19
			Managing climate and environmental risks	Our approach		p. 36, 37, 38
				Our progress	Identifying Risks & Impact	p. 38, 39, 40
				Next steps		p. 47
			Energy	Sector Outlook		p. 52, 53
				Advising & financing our clients		p. 56 - 59
				Managing climate and environmental risks in the Energy sector	Risk identification	p. 61
			Transport & Logistics	Automotive, Aviation, Shipping	Sub-sector outlooks	p. 69, 70, 74, 75, 78, 79
				Managing climate and environmental risks in the Transport & Logistics sector	Risk identification	p. 82
			Commercial & Residential Real Estate	Commercial Real Estate	Sector Outlook	p. 87
					Advising and financing our clients	p. 89
					Managing climate and environmental risks	p. 91
				Residential Real Estate	Sector outlook	p. 92 - 94
					Advising & financing our customers	p. 97 - 100
					Managing climate and environmental risks	p. 101
			Construction	Cement	Sector outlook	p. 104, 105
					Advising & financing our clients	p. 106, 107
					Managing climate and environmental risks	p. 107
			Metals & Mining	Steel	Sector outlook	p. 111
					Advising & financing our clients	p. 113
				Managing climate and environmental risks in Metals & Mining	Climate, Environmental and Social Risks	p. 115, 116

TCFD Recommended Disclosures			ING Chapter Reference	ING Section Reference		
Strategy	b	Describe the impact of climate-related risks and opportunities on the organisation's business, strategy & financial planning	Our integrated climate approach	Our ambition		p. 11
				Our climate action objectives		p. 13
				Enablers to our climate approach		p. 15, 16, 17
			Progress on our climate action priorities	Reaching net zero in our own operations		p. 22, 23
			Financing and advising our clients			p. 31 - 35
			Managing climate and environmental risks	Our progress	Scenario analysis	p. 40 - 43
					Risk & business strategy	p. 44, 45
			Energy	Advising & financing clients		p. 56 - 59
				Managing climate and environmental risks in the Energy sector	Governance & risk appetite	p. 62
					Risk management	p. 62
			Transport & Logistics	Automotive, Aviation, Shipping	Advising and financing our clients	p. 71, 72, 76, 80
				Managing climate and environmental risks in the Transport & Logistics sector	Governance & risk appetite	p. 82
					Risk management	p. 82, 83
			Commercial & Residential Real Estate	Commercial Real Estate	Advising and financing our clients	p. 89
					Managing climate and environmental risks	p. 91
				Residential Real Estate	Advising and financing our clients	p. 97 - 100
					Managing climate and environmental risks	p. 101
			Construction	Cement	Advising & financing our clients	p. 106, 107
					Managing climate and environmental risks	p. 107
			Metals & Mining	Steel	Advising & financing our clients	p. 113
				Managing climate and environmental risks in Metals & Mining	Climate, Environmental and Social Risks	p. 115, 116
	c	Describe the resilience of the organisation's strategy, taking into consideration different climate -related scenarios, including two-degree or lower scenarios	Managing climate and environmental risks	Our progress	Scenario analysis	p. 40 - 43
			Energy	Managing climate and environmental risks in the Energy sector	Risk management	p. 62
			Transport & Logistics	Managing climate and environmental risks in the Transport & Logistics sector	Risk management	p. 82, 83
			Metals & Mining	Managing climate and environmental risks in Metals & Mining		p. 115, 116

TCFD Recommended Disclosures			ING Chapter Reference	ING Section Reference		
Risk management	**a**	Describe the organisation's processes for identifying and assessing climate-related risks	Managing climate and environmental risks	Our progress	Identifying Risks & Impact	p. 38, 39, 40
	b	Describe the organisation's processes for managing climate-related risks	Managing climate and environmental risks	Our progress	Risk & Business strategy	p. 44, 45
			Energy	Managing climate and environmental risks in the Energy sector	Risk management	p. 62
			Transport & Logistics	Managing climate and environmental risks in the Transport & Logistics sector	Risk management	p. 82, 83
			Commercial & Residential Real Estate	Commercial Real Estate	Managing climate and environmental risks	p. 91
				Residential Real Estate	Managing climate and environmental risks	p. 101
			Metals & Mining	Managing climate and environmental risks in Metals & Mining		p. 115, 116
	c	Describe how processes for identifying, assessing, and managing climate-related risks are integrated in the organisation's overall risk management	Our Integrated Climate Approach	Enables to our climate approach	Effective governance and performance culture	p. 13
			Managing climate and environmental risks	Our progress	Governance	p. 43, 44
			Energy	Managing climate and environmental risks in the Energy sector	Risk management	p. 62
			Transport & Logistics	Managing climate and environmental risks in the Transport & Logistics sector	Risk management	p. 82, 83
Metrics & 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	Progress on our climate action priorities	Steering our portfolio with Terra		p. 24 - 30
			Progress on our climate action priorities	Financing and advising our clients	Our progress	p. 31 - 35
			Managing climate & environmental risks	Our progress	Reporting	p. 47
	b	Disclose Scope 1, Scope 2, and, if appropriate Scope 3 greenhouse gas (GHG) emissions, and the related risks	Progress on our climate action priorities	Reaching net zero in our own operations		p. 22, 23
				Steering our portfolio with Terra	Our progress/financed emissions	p. 29
	c	Describe the targets used by the organisation to manage the climate-related risks and opportunities and performance against tagets	Our Integrated Climate Approach	Our climate action objectives		p. 13
			Progress on our climate action priorities	Reaching net zero in our own operations		p. 22, 23
			Progress on our climate action priorities	Steering our portfolio with Terra	Targets & indicators	p. 26
			Energy	Steering our portfolio		p. 53 - 56
			Transport & Logistics	Automotive, Aviation, Shipping	Steering our portfolio	p. 71, 75, 76, 79, 80
			Commercial & Residential Real Estate	Commercial Real Estate	Steering our portfolio	p. 88, 89
				Residential Real Estate	Steering our portfolio	p. 94 - 97
			Construction	Cement	Steering our portfolio	p. 105, 106
			Metals & Mining	Steel	Steering our portfolio	p. 112, 114

Glossary

2DII: 2 Degrees Investing Initiative

AD: Alignment Delta

AER: Annual Efficiency Ratio

ALD: Asset-Level Data, economic activity data of physical assets (power plants, oil fields, cars, coal mines, etc.) acquired from external industry databases.

APAC: Asia-Pacific

B2B: Business to Business

B2C: Business to Consumer

B2DS: IEA (ETP) Beyond 2 Degree Scenario

BaFin: Federal Financial Supervisory Authority (Germany)

BEV: Battery-electric Vehicles

BF: Blast Furnace

BREEAM: Building Research Establishment Environmental Assessment Method

C&E: Climate-related and environmental (risks)

C&I: Commercial and Industrial

CAPEX: Capital Expenditures

CCC: Climate Change Committee

CCCA: Collective Commitment to Climate Action

CCS: Carbon Capture Storage

CCUS: Carbon Capture Utilisation and Storage

CDP: Carbon Disclosure Project

CoE: Centre of Expertise

COP: Conference of the Parties

CRAF: Climate Risk Appetite Framework

CRREM: Carbon Risk Real Estate Monitor

DRI: Direct Reduction Iron

EAF: Electric Arc Furnace

EBA: European Banking Authority

EBIT: Earning Before Interest and Taxes

EBITDA: Earnings Before Interest, Taxes, Depreciation, and Amortization

EC: European Commission

ECB: European Central Bank

NFRD: Non-Financial Reporting Directive

EEFIG: Energy Efficiency Financial Institutions Group

EIB: European Investment Bank

EMEA: Europe, the Middle East and Africa

EMS: Environmental Management System

EP4: Equator Principles

EP: Environmental Programme

EPC: Energy Performance Certificates

ESG: Environmental, Social and Governance

ESR: Environmental & Social Risks

ETSP: Energy Transition Scenario Planning

EU: European Union

EUT: European Union Taxonomy

EV: Electric Vehicle

FCF: Free Cash Flow

FO: Front Office

FSB: Financial Stability Board

GAR: Green Asset Ratio

GBP: Green bond principles

GCC-TA: Global Credit Committee – Transaction Approval

GCTP: Global Credit & Trading Policy Committee

GHG: Greenhouse gases

GWh: Gigawatt hour

IABS: Infrastructure Asset-Backed Securitisation

ICE: Internal Combustion Engines

ICMA: International Capital Market Association

IEA: International Energy Agency

IFC: International Finance Corporation

IIF: Institute of International Finance

ITF: International Transport Forum

IMO: International Maritime Organisation

IUCN: International Union for the Conservation of Nature

LEED: Leadership in Energy and Environmental Design

LMA: Loan Market Association

M&A: Mergers and acquisitions

MBB: Management Board Banking Board

MPP: Mission Possible Partnership

NBB: National Bank of Belgium

NET: New Energy Technologies

NGFS: Network for Greening the Financial System

NZBA: Net Zero Banking Alliance

OECD: Organisation for Economic Co-operation & Development

OEM: Original Equipment Manufacturer

OPEX: Operating Expenses

PaaS: Products as a Service

PACTA: Paris Agreement Capital Transition Assessment

PBL: Netherlands Environmental Assessment Agency

PCAF: Partnership for Carbon Accounting Financials

PET: Polyethylene terephthalate

PP: Poseidon Principles

PRB: Principles for Responsible Banking

PV: Photovoltaics

R&D: Research and Development

R&P: Renewables and Power

RCF: Revolving Credit Facility

RCP: Representative Concentration Pathway

REDD+: Reducing emissions from deforestation and forest degradation

REF: Real Estate Finance

REIT: Real Estate Investment Trust

RFC: Royal Friesland Campina

RVO: Netherlands Enterprise Agency

RWA: Risk-weighted Asset

SBTi: Science Based Targets initiative

SDA: Sectorial Decarbonisation Approach

SDS: Sustainable Development Scenario

SLB: Sustainability-linked Bond

SLL: Sustainability-linked Loan

SME: Small & Medium-sized Enterprises

SSD: Schuldshein

T&L: Transport and Logistics

TCFD: Task Force on Climate-related Financial Disclosures

TNFD: Taskforce Nature-related Financial Disclosures

TPED: Total Primary Energy Demand

UNEP-FI: United Nations Environment Programme Finance Initiative

UNESCO: United Nations Educational Scientific and Cultural Organization

UNGC: United Nations Global Compact

VCUs: Voluntary Carbon Units

WB: Wholesale Banking

WEO: World Economic Outlook

WRI: World Resources Institute

WWF: World Wide Fund for Nature

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 Bank N.V.)

ING Group's annual accounts are prepared in accordance with International Accounting Standard 34 'Interim Financial Reporting' as adopted by the European Union ('IFRS-EU'). In preparing the financial information in this document, except as described otherwise, the same accounting principles are applied as in the 2020 ING Group consolidated annual accounts. 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 a number of factors, including, without limitation:

(1) changes in general economic conditions, in particular economic conditions in ING's core markets, including changes affecting currency exchange rates
(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 financial services 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 authorizations 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 and other risks and challenges in connection with climate change
(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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