Foreword

A lot has changed since Rabobank published its first sustainability report in 1998. The planet has gotten warmer. Food and water insecurity is on the rise. Biodiversity loss has accelerated, driven by deforestation and excessive nitrogen deposits, among other causes. The war in the Ukraine has destroyed millions of lives and set off a global energy crisis. The need to transform our economies and societies to more sustainable ways of living and working has never been greater or more urgent.

Fortunately there are also signs of hope. The European Union and the United States have passed comprehensive green policy agendas supported by unprecedented levels of financing. China has announced that it will reach peak emissions in 2030. Renewable energy has never been so affordable or abundant. And former niche topics like green hydrogen and carbon capture have become central tenets of many national sustainability plans.

There has also been a marked change in how the business world is engaging with sustainability matters. Record numbers of companies have made climate and biodiversity pledges. In the global finance industry, 122 signatories of the Net-Zero Banking Alliance, including Rabobank, have pledged to actively support the Paris Climate Agreement by bringing their financial resources in line with pathways that limit global warming to 1.5°C. We are proud to be part of this movement and we have been reporting on our ambitions and progress on these and other sustainability issues in our annual Impact Report and our ESG Facts & Figures Report, among others, for several years now.

In this special report we focus on climate change. It complements and builds on our 2021 Impact Report in which we disclosed baseline financed emissions for 85% of our climate-material assets. In this report we identify decarbonization pathways and set our initial GHG emission reduction targets for 12 high-emitting sector/region combinations accounting for EUR 253.5 billion in exposure and 70% of our reported financed emissions. Our initial calculations suggest that three of these sector/region combinations currently have average carbon intensities that are compatible with 1.5°C aligned pathways. For the other nine sector/region combinations the picture is less clear as we are still struggling to get the data and methodologies we need to set accurate and realistic targets. But we know that further reductions are needed for all sectors.

Despite these limitations, we have attempted to set preliminary decarbonization objectives for these sectors. We accept that this means we will likely have to make revisions in future reports. But given the urgency of the situation and our role as a leading global bank, we feel that it is important to be transparent about where we stand and the challenges we face.

While we still face uncertainties about exact emissions metrics in some sector/regions, we have already identified actions that we can take to help our clients across our portfolio transition to a low-carbon future. As a global food and agriculture bank we see transitioning to climate-smart agricultural practices as a critical component of building a resilient food system and strengthening rural livelihoods. That is why we are helping our clients to engage in productive and regenerative agriculture, protect and restore nature, diversify protein supply, and reduce food loss and waste. As one of the largest mortgage suppliers in the Netherlands, we have been helping our home and building owners improve their energy efficiency through advisory services and financial products such as green mortgages and building deposits to implement energy efficiency measures. And as an active player in the energy transition, we aim to more than triple our renewable power generation portfolio by 2030.

Our efforts to mitigate climate change do not stop with our financial products and services. Our RaboResearch department delivers insights for businesses around the world, including into climate change challenges. In our home market, the Netherlands, we are an active member of platforms like the Dutch Climate Tables, which bring together public, private, academic, and civil society stakeholders to develop coordinated responses to climate challenges. Outside of the Netherlands, we promote sustainability through industry associations and client councils.

In addition to climate impact, this report also provides an update on our approach to climate risk management. We believe that currently it is our clients’ credit risk that is most vulnerable to climate-related shocks. With this in mind, we have developed heatmaps as a first step to analyzing the potential impact of climate and other environmental risks. We now have heatmaps for physical risks including extreme heat, wildfires, flooding and water scarcity. And to strengthen our insights into transition risks we have been working on a policy heatmap. As with climate impact, we also face data and methodological challenges in our climate risk management approach.
As we emerge from the most acute phase of the COVID-19 pandemic, it is only natural that we might feel weary at the thought of having to deal with yet another crisis. But the pandemic has taught us hard-won lessons that can help us tackle the climate crisis. Perhaps the most important is that in the face of grave threats, societies can come together and rapidly mobilize resources, knowledge and innovation to overcome seemingly insurmountable odds.

Another critical lesson is that we must be open with each other about our approach and our progress towards our goals. This means sharing our successes, but also our challenges and failures. Rabobank does not have all the answers to the questions that climate change poses. But we are committed to continually improving our understanding of our clients’ needs and their challenges, as well as what we can and cannot do to help them transition to a low-carbon future.

We are proud of the progress we have made to date, but are aware that we still have a long way to go.

We invite you to join us on our Road to Paris.

Bas Brouwers, Chief Finance Officer & Interim Chair of Rabobank’s Managing Board
Management Summary
Management Summary

An Important Step on Our Road to Paris

At Rabobank, sustainability is an integral part of our corporate mission: “Growing a better world together.” We are committed to making a difference as a cooperative, client-driven, all-finance bank. We want to contribute to feeding the world sustainably, transforming the way we produce and consume energy, and to fostering well-being and prosperity in the communities in which we are active. We aim to be a responsible bank, addressing issues that have a major impact on society, the environment, and on our clients. This is why we actively engage in facilitating transitions which matter to us and our stakeholders now and in the future: the Food Transition, the Energy Transition, and the Transition to a More Inclusive Society.

While our efforts in sustainability areas such as biodiversity and nitrogen deposits in the Netherlands are among our key priorities, this report focuses on our work on climate change. It builds on our previous disclosures in our 2020 Climate Report, and complements our 2021 Impact Report and our 2021 Taskforce on Climate Related Financial Disclosures (TCFD) disclosure, both of which were published earlier this year.

Climate change threatens human communities and natural ecosystems all over the world. We clearly recognize the gravity of the situation and are fully committed to supporting the goals of the Paris Climate Agreement. We look at climate change through the lens of “double materiality.” On the one hand, we see that the aggregate GHG emissions and removals linked to our own operations and those of our clients have a negative impact on the climate. We rapidly need to reduce our climate impact to get it in line with pathways limiting global warming to 1.5°C. On the other hand, we see that climate change increases the risk of financial and economic instability for many of our clients. We need to integrate these risks into our risk management models and processes. We call this Climate Risk Management.

Paris Alignment

Our Paris Alignment process is focused on delivering on our commitment to transition all operational and attributable GHG emissions from our lending and investment portfolios to align with 1.5°C pathways by mid-century or sooner, including CO2 emissions reaching net-zero at the latest by 2050, consistent with a maximum temperature rise of 1.5°C above pre-industrial levels by 2100. Our approach will take into account the best available scientific knowledge, including the findings of the IPCC, and we commit to reviewing and (if necessary) revising our targets at least every five years after the target is set.

Earlier this year, we disclosed the GHG emissions of our own operations (0.058 Mt CO2e) as well as our financed emissions, which is 85% of our material on-balance sheet climate-related lending activities (46.3 Mt CO2e). In this report, we take a further step towards realizing our commitment by disclosing reduction targets and transition plans for our own operational emissions and for financed emissions from 12 sector/region combinations accounting for approximately 70% of our climate-material loan portfolio.

Setting an Example: Ambitious Targets and Plans for Our Own Emissions

Since 2018 we have significantly reduced our operational GHG emissions. And we have been offsetting our residual emissions through different types of carbon credits since 2007. The majority of our operational GHG emissions fall under three categories: the use of electricity, heating, cooling, and natural gas in our offices; business-related travel by car and business-related travel by plane. We have set emission reduction targets for 2030 for each of these categories. We have made our offices more energy efficient, our lease car fleet cleaner, and changed the way we travel and how often we do so. We have used science-based benchmark decarbonization pathways for the three main emissions categories.

1 In this report, Rabobank’s (financed) GHG emissions are split into scope 1, 2 and 3 emissions following the Greenhouse Gas Protocol of the World Business Council for Sustainable Development and the World Resources Institute. For more information on the results, scope and methodologies please see the chapter Metrics & Targets in this report and our 2021 Impact Report.

2 Our activities abroad are much smaller than our Dutch activities, also in terms of emissions. As a result, we have less control over the short term reduction potential of our international emissions; for example because we rent office space and are dependent on the owner of the building to improve energy efficiency. Nevertheless, we are actively investigating our options and will soon publish our interim reduction targets for these emissions as well.
Currently, our emissions fall well within these intensity reduction pathways. In order to stay on this track, we have set the following interim reduction targets for the emissions emanating from our activities in the Netherlands, as shown in the table below:

### Operational Emissions Targets

<table>
<thead>
<tr>
<th>Sector</th>
<th>2018 (x 1,000 kg CO2)</th>
<th>2018 Intensity emissions</th>
<th>2030 Target (x 1,000 kg CO2)</th>
<th>Intensity 2030 target</th>
<th>Reference scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate Rabobank Group NL</td>
<td>77,174</td>
<td>62.67 kg CO2/m²</td>
<td>31,959</td>
<td>44.17 kg CO2/m²</td>
<td>CRREM</td>
</tr>
<tr>
<td>Lease cars Rabobank Group NL</td>
<td>10,824</td>
<td>0.151 Mt CO2/billion vkm</td>
<td>2,721</td>
<td>0.070 Mt CO2/billion vkm</td>
<td>IEA NZE</td>
</tr>
<tr>
<td>Air travel Rabobank Group NL</td>
<td>6,212</td>
<td>0.105 Mt CO2/billion pkm</td>
<td>3,591</td>
<td>0.076 Mt CO2/billion pkm</td>
<td>IEA NZE</td>
</tr>
</tbody>
</table>

We are also updating our policy on the use of carbon credits to offset our own emissions. In our view, carbon credits can be used to offset emissions only if the offset is credible, which means it must be real, additional and, ultimately, permanent.

### Financed Emissions: Helping Our Clients Transition to a Climate-smart Future

Our first steps towards Paris Alignment focus on 12 high-emitting sector/regions. Together these sectors account for 70% of our material climate-related on-balance sheet loans and more than half of the financed emissions we disclosed in our 2021 Impact Report (26.9 of 46.3 Mt CO2e) which we will update regularly.

We have split our portfolio in line with the two key strategic transitions related to our climate impact strategy: the Energy Transition and the Food Transition. We have grouped high-emitting sectors where the GHG emissions sources are primarily linked to fossil fuels under the Energy Transition. The Food Transition sector covers sectors where the emissions are primarily biogenic, that is related to biological processes as opposed to the burning of fossil fuels for energy.

Of the four Energy Transition sector/region combinations, currently three have average emissions intensities that are compatible with 1.5°C pathways, but continuing reductions are needed. The majority of our climate-material exposure is in our residential and commercial real estate activities (58% of total).

Together, these combinations account for 2.4 Mt CO2e, or roughly 10% of the financed emissions. On the positive side, our International Energy portfolio is primarily composed of project financing for renewable energy projects, which resulted in 5.6 Mt CO2e in avoided emissions in 2020.

As GHG emissions accounting and emissions reduction pathways for agriculture are still in the developmental stage, in terms of our Food Transition sector/region combinations, we have split our portfolio into Dutch and international sectors. Based on the targets the Dutch government has set, we were able to determine absolute emissions reduction pathways for three high-emitting sectors in our Dutch F&A portfolio: Dairy, Greenhouse Horticulture, and Pig Farming. The targets the Dutch government has set, are preliminary, they could potentially change both in height and in scope (e.g. to include LUC). Once final, we will investigate the impact of any changes on our own targets. We were unable to identify suitable decarbonization pathways for our DLL tractor portfolio, but we have included it in this report with an initial target based on preliminary internal estimates.

We have used the newly released SBTi FLAG tool to derive emissions intensity reduction pathways for four sector/region combinations (one high-emitting sector in each of the largest regions in our international portfolio). Although we do not yet have sufficient data to calculate the emissions intensity of our portfolio for these combinations, we have decided to use the default reduction pathways to set preliminary targets. We will finalize these targets as soon as data and methodologies allow.

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1 Avoided emissions have been calculated using the Renewable Energy GHG Accounting Approach from the International Finance Institutions (IFI) Technical Working Group on Greenhouse Gas Accounting. Grid factor emissions were calculated using the IFI Harmonized Grid Emission factor data set version 3 (published December 2021).
Reducing Emissions per sector/region combination

<table>
<thead>
<tr>
<th>Sector</th>
<th>Region</th>
<th>% In-scope portfolio FY'20</th>
<th>Metric</th>
<th>Sector/Region reduction target 2030</th>
<th>Reference Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Transition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dairy</td>
<td>Netherlands</td>
<td>3.1%</td>
<td>Absolute</td>
<td>&gt;0.8 Mt CO2e</td>
<td>Dutch Climate Agreement</td>
</tr>
<tr>
<td>Pig Farming</td>
<td>Netherlands</td>
<td>0.4%</td>
<td>Absolute</td>
<td>&gt;0.3 Mt CO2e</td>
<td>Dutch Climate Agreement</td>
</tr>
<tr>
<td>Horticulture</td>
<td>Netherlands</td>
<td>0.8%</td>
<td>Absolute</td>
<td>2.2 Mt CO2e</td>
<td>Dutch Climate Agreement</td>
</tr>
<tr>
<td>Beef</td>
<td>Australia</td>
<td>0.8%</td>
<td>tCO2e/t</td>
<td>-10%</td>
<td>SBTi FLAG</td>
</tr>
<tr>
<td>Beef</td>
<td>United States</td>
<td>0.4%</td>
<td>tCO2e/t</td>
<td>-17%</td>
<td>SBTi FLAG</td>
</tr>
<tr>
<td>Dairy</td>
<td>New Zealand</td>
<td>1.2%</td>
<td>tCO2e/t</td>
<td>-12%</td>
<td>SBTi FLAG</td>
</tr>
<tr>
<td>Soy</td>
<td>Brazil</td>
<td>0.5%</td>
<td>tCO2e/t</td>
<td>-49%</td>
<td>SBTi FLAG</td>
</tr>
<tr>
<td>Tractors</td>
<td>International</td>
<td>2.4%</td>
<td>NA</td>
<td>-5%</td>
<td>NA</td>
</tr>
<tr>
<td>Energy Transition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Real Estate</td>
<td>Netherlands</td>
<td>52.4%</td>
<td>kg CO2/m²</td>
<td>-30%</td>
<td>CRREM</td>
</tr>
<tr>
<td>Commercial Real Estate</td>
<td>Netherlands</td>
<td>5.4%</td>
<td>kg CO2/m²</td>
<td>-27%</td>
<td>CRREM</td>
</tr>
<tr>
<td>Transport</td>
<td>NL + International</td>
<td>1.4%</td>
<td>Mt CO2/billion tkm</td>
<td>-37%</td>
<td>IEA NZE</td>
</tr>
<tr>
<td>Energy / Power Generation</td>
<td>Netherlands</td>
<td>0.3%</td>
<td>kg CO2/kWh</td>
<td>-48%</td>
<td>IEA NZE</td>
</tr>
<tr>
<td></td>
<td>International</td>
<td>1.1%</td>
<td>kg CO2/kWh</td>
<td>0%</td>
<td>IEA NZE</td>
</tr>
<tr>
<td>Portfolio in scope 2020 Road to Paris</td>
<td></td>
<td></td>
<td>70%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio in scope 2020 Impact Report</td>
<td></td>
<td></td>
<td>85%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Portfolio</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*CEG = Covenant Energietransitie Glastuinbouw 2021-2030 (to be finalized)
**FPCM = Fat- and Protein-Corrected Milk

Due to these constraints, our 2030 intermediate targets are a combination of absolute emissions reduction targets and physical intensity reduction targets. We prefer to work with emissions intensity reduction targets (in line with Net-Zero Banking Alliance (NZBA) guidance) where possible, as they account for both portfolio growth and emissions reductions in the given sector/region combinations.

How We Will Deliver on the Targets

Our plans to achieve our Paris Alignment targets use interventions at three different levels:

1. **Client Level**: helping clients transition to a low-carbon future. We do this by providing our clients with knowledge and insights into how they can decarbonize their activities, financial products to support their transition, and financing for new innovations that will accelerate their efforts.

2. **System/Economy Level**: helping move the system to a low-carbon future. The transition to a sustainable economy requires systemic change. We support this by engaging with stakeholders at different levels in the economy and society.

3. **Portfolio Level**: optimizing our portfolio for sustainability. Even though our focus is on helping our clients and their sectors transition to a low-carbon future, we also make conscious choices about growing our portfolio sustainably.

At the same time, we must stress that we cannot meet these targets on our own. Even though we have direct control and a clear idea of how to reduce our own emissions, when it comes to the financed emissions of our clients, we have to rely to a significant degree on the efforts of others, including, but not limited to, our clients themselves.

Furthermore, we are still dealing with many uncertainties. For instance, we do not yet know the actual emissions of our F&A clients, our home owners, or our small business clients, which means that for now, we are using model-based estimates to set our targets. In the F&A sector (on subsector-level), there are also open questions regarding national reduction targets and residual emissions that need to be answered. As a result of these limitations, the targets and associated reduction plans we present in this report are neither perfect nor final. They carry inherent uncertainties and will have to be updated in future iterations of this report, as more information becomes available. Nevertheless, we believe that setting targets and disclosing our current plans now provides direction, and that it will help us progress down our Road to Paris.
Highlights of Our Plans and Progress to Date

Although we are still in the early stages of our Paris Alignment process and are still wrestling with data and methodological constraints in several sector/region combinations, we have already taken decisions and implemented activities that will have real economic impact in supporting the Paris Climate Agreement:

**Client Level**

- We have put pricing incentives in place in the form of lower interest rates for clients with certain eco-labels (Impact Loan), or sustainability key performance indicators (Sustainability-linked loans) or with concrete sustainability investments (Green Loan).
- We have introduced a pricing incentive for all financing products for sustainable frontrunners in the Dutch dairy sector with more than EUR 1 million in financing.
- We have started encouraging our international farmer clients to use carbon calculators on their farms and we are developing carbon dashboards for our Dutch F&A clients.
- We have trained all our mortgage advisors in a five-step homeowner sustainability journey, which in 2021 resulted in 25% of our new mortgage contracts including an average of EUR 14,500 in financing for energy-savings measures.
- We have set minimum energy label thresholds for our commercial real estate portfolio and have set up client awareness and support initiatives to help them improve energy efficiency.
- We are helping Dutch small business owners to transition their business vehicles to electric platforms through our RaboElectric program.

**System/Economy Level**

- We are an active participant in the Dutch Climate Tables (Klimaattafels) working with the government, civil society and other key stakeholders to further develop the Dutch national climate plan.
- We actively participate in numerous commercial real estate platforms focusing on climate mitigation and risk including Alle Seinen op Groen and the Dutch Green Building Council.
- We are an active member of the Partnership for Carbon Accounting Financials (PCAF), which is developing and improving the methodologies that financial institutions use to measure GHG emissions.
- We have also established the Banking for Food on Climate in Agriculture initiative to focus specifically on methodologies for banks with large F&A portfolios in cooperation with PCAF, the UNEP Finance Initiative, and the World Business Council for Sustainable Development.

**Portfolio Level**

- We continue to expand our considerable investments in wind energy in Europe. Our EUR 3.4 billion renewable power generation portfolio generated 5.6 Mt CO2 in avoided emissions in 2020.1
- We stopped the direct financing of coal-fired power generation in 2017, and companies involved in the exploration or extraction of crude oil in 2021.
- We no longer provide direct financing to companies that realize more than 5% of their turnover in trading coal used for power generation and we will be reducing this to zero by 2030.
- We have scoped 48 Energy Transition projects (41 business-to-business, 7 business-to-consumer) to help close the gap towards the 2030 Paris Alignment targets. Existing plans and initiatives add up to an estimated EUR 30 billion in the financing of assets related to the energy transition by 2030.
- We have taken specific measures to prevent deforestation in Brazil:
  - We do not finance any deforestation, even if legally allowed;
  - We do not on-board, or maintain, customers involved in illegal deforestation that occurred after 2005;
  - We do not accept as collateral lands in the Amazon biome which has been deforested after January 1, 2018, even if done legally;
  - We have standards and procedures in place to minimize the risks of accidentally becoming involved in financing deforestation (but we know the risk is not fully eliminated).

1 See page 24 of this report and our 2021 Impact Report for the accounting methodology.
Climate Risk Management

We recognize that climate change and the transition to a net-zero economy poses both physical and transition risks which must be embedded in our risk management framework. Considering traditional types of financial risks, we expect our credit risk profile to feel the greatest impact from climate and environmental risks. For that reason, we have given particular attention to the impact that climate-related risks have on our clients’ credit risks.

In order to identify climate and environmental risks, we use climate risk heatmaps as a starting point. These heatmaps are created by combining the threat level and event impact on our clients per event/geographic location/sector. To date, we have developed heatmaps for several physical risks (e.g. extreme heat, wildfires, flooding, and water scarcity). As for transition risks, our heatmap currently focuses on impending policy change. The transition risks we foresee that relate to our envisaged transition plans will be disclosed in subsequent reporting.
Combining heatmaps with our credit exposure in the relevant sector/geographic region enables us to identify concentrations of inherent risks in our portfolio. The outcomes of the heatmaps and concentration analysis are used for scenario analyses and provide input for, among others, climate risk stress testing and sector strategies. In the near future, we will also use our scenario analyses to perform assessments on vulnerable sectors as well as on client-level. The heatmaps are ultimately intended to help us integrate risk assessments in our strategy, capital, provisioning, and pricing.

Although we face several challenges in the process of integrating assessed risks (such as a lack of data concerning both climate-related events and insufficient data on our clients), we are making progress and our understanding of our climate- and environmental risks keeps evolving. We will continue to update and refine our risk management going forward.

Future steps will include ramping up client engagement on physical and transition risks (and opportunities) as knowledge about these risks expands, further integrating climate risks (and opportunities) in the education and training of our personnel, and publishing annual progress reports.

**Governance**

The Managing Board is responsible for making critical climate and other sustainability-related decisions, and steers progress supported by a team of senior executives who form the Sustainability Implementation Team, chaired by our Chief Sustainability Officer. Climate risk topics fall under the remit and supervision of the bank’s Risk Management Committee.
The 2015 Paris Climate Agreement directs banks and other financial institutions to “make finance flows consistent with a pathway to low greenhouse gas emissions and sustainable development.” At Rabobank, we call this process Paris Alignment. Our commitments to aligning our financing activities with the Paris Climate Agreement mean that we are actively seeking ways to reduce the negative impact (e.g. financing fossil fuel production) and increase the positive impact (e.g. granting loans to renewable energy projects) of our financing activities and our own operations, on climate change.

The availability, specificity and accuracy of the data we use to make the calculations presented in this report varies widely per sector. In most cases, our clients do not yet report their own GHG emissions, so we calculate estimates using proxy indicators. Therefore, the financed emissions overview presented in this report should be interpreted as our estimates on a best effort basis using the current information and data. And while we cannot guarantee the complete accuracy of the metrics, we can be transparent about their limitations and how we arrived at them.

Furthermore, the GHG emissions accounting methodology for agriculture, land use and land-use change is still under development, so for our F&A clients we have been forced to adapt the accounting methods associated with non-biogenic emissions and removals. The anticipated release of the new GHG Protocol for Land Use and Removals in 2023 will provide a new cornerstone for GHG accounting practices in the F&A sector.
Strategy
Sustainability: Part of Our History and Part of Our Mission

Our focus on sustainability is an integral part of our corporate mission: “Growing a better world together.” We are committed to making a difference as a cooperative, client-driven, all-finance bank. We want to make a substantial contribution to feeding the world sustainably, transforming the way we produce and consume energy, and to fostering well-being and prosperity in the communities in which we are active. We aim to be a responsible bank, addressing issues that have a major impact on society, the environment, and on our clients. This is why we actively engage in facilitating transitions which matter to us and stakeholders now and in the future: the Food Transition, the Energy Transition, and the Transition to a More Inclusive Society.

Food Transition

Enough Affordable, Nutritious Food for All, Within Planetary Boundaries

Our commitment to the Food Transition stems directly from our founding story. As a cooperative bank, we have been dedicated to creating a future-proof society and tackling major societal challenges for 125 years. As a bank founded by farmers for farmers that has supported F&A businesses all over the world for decades and gained a wealth of sector knowledge, we believe that the F&A sector can be a significant part of the solution for the challenge of providing enough affordable, nutritious food for a growing world population within planetary boundaries.

We have developed a group-wide Food Transition vision. At the heart of this vision, which we will discuss here, is our ambition to create a “from here to greener” transition with existing clients through our financing, knowledge development, network, and innovation activities.

The Food Transition vision is structured around the Food and Land Use Coalition’s (FOLU) framework for a food and land use system within planetary boundaries. This framework provides a coherent, comprehensive perspective on where we need to be by 2030 in order to stay on track for our 2050 goals. FOLU’s framework identifies 10 themes. We have selected five themes on which we expect to have the most impact:

- Productive and Regenerative Agriculture: in many parts of the world this entails a shift away from high-input agriculture (productive but causing (among others) high GHG emissions) to a set of agricultural practices that focuses on the health of the ecological system as a whole (also referred to as regenerative agriculture).
- Protecting and Restoring Nature: Bringing an urgent end to deforestation and ensuring significant forest restoration over the coming decades.
- Promoting Healthy and Sustainable Diets: more fruits, vegetables, and whole grains, diverse protein supply. Less sugar, salt and highly processed foods, especially in developed markets (acknowledging that a universal, global, and prescriptive approach is not possible), and stimulating supply that is aligned with such diet.
- Reducing Food Loss & Waste: reducing food loss and waste (approximately one-third of all food produced is lost or wasted) can significantly reduce both GHG emissions and pressure on climate, water, and land resources.
- Stronger Rural Livelihoods: establishing higher incomes through better rural jobs created by a dynamic agricultural sector and growing opportunities for diversification in rural economies. Giving this theme due attention is essential to delivering a “just” transition.

There are still many questions we need to answer about how we will reach Paris Alignment with our F&A portfolio, not least of which is: what does net-zero mean for an essential sector that cannot completely eliminate its biogenic GHG emissions? New methodological developments, such as the recent launch of the SBTi FLAG tool and the upcoming GHG Protocol guidance for land use and removals will provide important building blocks. And a growing awareness of the need for GHG emissions accounting and reporting within the sector will provide much needed access to better data. We are working to accelerate these developments. Together with the World Business Council for Sustainable Development (WBCSD), UNEP FI, and the Partnership for Carbon Accounting Financials, we launched the Banking for Impact on Climate in Agriculture initiative to help financial institutions measure, benchmark and disclose their F&A portfolio GHG emissions. We have also started piloting plans to encourage our international rural clients to adopt on-farm carbon calculators. These are just the first small steps in a long journey.
Energy Transition

Towards a More Sustainable Energy Supply and Consumption

The transition from fossil fuels to renewable energy sources like wind and solar will demand fundamental changes to how we all live and work. The urgency with which we need to make the transition, due to the threat of climate change, is putting our societies under great pressure. But the transition also holds the promise of decreasing our dependency on fuel imports and the potential to create a more inclusive society so long as its benefits are distributed equitably.

For us, the energy transition is an opportunity to further build on our position in renewable power generation. We have been financing wind energy in Europe for over 20 years. We are now expanding our focus to other regions, such as North America. In 2017, we stopped the direct financing of coal-fired power generation and the financing of companies that realize more than 20% of their turnover in trading coal used for power generation, as well as companies involved in the exploration or extraction of crude oil. Today, we no longer provide direct financing to companies that realize more than 5% of their turnover in trading coal used for power generation and we will be reducing this to zero by 2030.

The energy transition means changing how we generate and consume energy. We will focus our efforts to avoid and reduce coal used for power generation and we will be reducing this to zero by 2030.

In 2017, we stopped the direct financing of coal-fired power generation and the financing of companies that realize more than 20% of their turnover in trading coal used for power generation, as well as companies involved in the exploration or extraction of crude oil. Today, we no longer provide direct financing to companies that realize more than 5% of their turnover in trading coal used for power generation and we will be reducing this to zero by 2030.

Although the emissions intensities of three of our sector/region combinations are currently compatible with 1.5°C pathways, we need to continue working with our clients to further lower them. We expect to realize approximately half of the expected emissions reductions through the increased deployment of existing financial solutions and existing technology. We have scoped 48 projects (41 business-to-business, 7 business-to-consumer) to help close the gap towards the 2030 Paris alignment targets. We decided to recruit and/or reskill 100 professionals in 2023 dedicated to accelerating the energy transition, with a further growth of the workforce foreseen in the years thereafter. Existing plans and initiatives add up to an estimated EUR 30 billion of financing of assets related to the energy transition by 2030. The ambition is to develop further initiatives, up to EUR 50 billion of financing to reach the emission reduction targets and also to further increase our contribution to avoided emissions, such as from renewable energy projects. In the existing plans we aim for EUR 10 billion of additional financing for renewable energy power generation (solar panels, wind parks, and other), with further additions to be considered.
**It's All Connected**

All these transitions and themes are intertwined. For example, climate change can also drive more people into poverty and reduce inclusion. At the beginning of this year, in the Netherlands, there were more than half a million households struggling to pay their energy bills. With the current extreme rise in energy costs it is likely that this number will grow even further. In the F&A sector in the Netherlands, the need to drastically cut nitrogen emissions and move to more sustainable farming practices means that many farmers are facing serious threats to the economic sustainability of their businesses.

For financial institutions, the “double materiality” of climate change adds to the complexity. On the one hand, we see that climate change poses risks for the economy, for companies, and for financial institutions. These risks may be acute physical risks, such as flooding, drought, or storms that damage or reduce production capacity. They may also be transitional risks arising from either restrictions on or reductions in production capacity due to new regulations, changing consumer preferences, or increasing costs. Both physical and transitional risks can threaten the competitiveness or economic viability of companies and economic sectors, and may lead to increased risk, higher default rates, or stranded assets, all of which banks have to take into consideration when evaluating loan or investment proposals. On the other hand, it is clear that our clients’ activities also have a negative impact on the climate. Whether it is a transport company whose trucks emit CO2, a farmer whose dairy cows produce methane, or a homeowner heating their house, our clients emit GHG in one form or another. But we also see an increasing number of our clients actively working to reduce their impact on the climate, and some are finding business opportunities in avoiding or removing GHG emissions.

Despite these and other challenges, we believe that these transitions are necessary and that the long-term benefits they will unlock for society far outweigh the short-term difficulties. Accelerating the transitions and minimizing the pain will require the coordinated efforts of our entire society. As a bank with its roots in cooperative action, we are ready to play our role.

**Road to Paris Client Case**

**The Challenge**

Small-scale farmers in developing countries face extreme drought and rainfall more frequently because of the climate crisis. With disastrous consequences for their harvests and incomes.

**The Solution**

Agroforestry and carbon storage. Trees offer protection to other crops, but can also remove CO2 from the atmosphere. This creates a whole new revenue model for small farmers to earn money on the international carbon market. Development organization Solidaridad has started working with coffee farmers with potential for carbon sequestration. They help them to plant the right trees and work with Rabobank’s Acorn Program to gain access to the market-place for carbon certificates. At least 80% of the proceeds flow back to the farmers.
Our Commitments

In 2019 we joined other Dutch financial institutions in signing a declaration committing ourselves to supporting the realization of the Dutch Climate Agreement. The Agreement was based on the Paris Climate Agreement’s well-below 2°C warming scenario and aimed to reduce GHG emissions by 49% by 2030 (as compared to the 1990 baseline). It also included specific sectoral GHG emissions reduction targets for different sectors of the Dutch economy. These sectoral targets formed the basis for the initial climate change approach for our Dutch lending portfolio. Then, in 2022, the new Dutch government climate policy program announced its ambition to aim for a 60% reduction in GHG emissions by 2030 in order to ensure that it would achieve 55% reduction target enshrined in the European Commission’s “Fit for 55” policy objective. The government and sector tables are now working on translating this increased ambition into updated sectoral goals.

Meanwhile, in October 2021, we joined the NZBA. In doing so we also adopted the more ambitious 1.5°C Paris Agreement temperature target and promised to reach net-zero financed emissions in our portfolio by 2050.

In 2019, we signed the Financial Institutions Commitment to the Dutch Climate Agreement, and in 2021 we joined the Net-Zero Banking Alliance. We choose to follow the NZBA disclosure guidelines as they are more detailed and specific.

Commitments & Memberships

**Our Road to Paris - Strategy**
Our Approach

We call our plans to reach net-zero our Paris Alignment strategy. It focuses on two core objectives: reducing our own operational GHG emissions and helping our clients reduce their emissions and/or scale their removals. Our starting point is our own operational GHG emissions. For years we have been working to reduce the carbon footprint of our own operations by making our offices more energy efficient, our lease car fleets cleaner, and by reducing and changing how we travel. We have been purchasing carbon credits to offset our residual emissions since 2007.

A far greater and more complex challenge lies in reducing our so-called Scope 3 Financed Emissions, or the GHG emissions our clients emit and that we indirectly enable through our financing. Although it is our clients that ultimately must decide if, how, and when to transition to climate-smart ways of living and working, we have a role to play in making them aware of the need to transition and the ways of doing so, and by supporting them with the necessary financing. This also means taking a more critical approach to financing high-emitting activities, which will also be reflected in our risk assessment models and underwriting criteria.

Four-step Approach

To achieve these objectives, we have developed an approach consisting of four key steps:

**Step 1:** Measuring and monitoring the carbon footprints of our operational emissions and our financed emissions. In order to concentrate our efforts and gauge our progress, we use established methodologies to determine the GHG emissions, which we review and disclose on an annual basis.

**Step 2:** Using science-based sectoral decarbonization pathways as a benchmark to determine the extent to which our clients’ activities either are aligned with a 1.5°C pathway. Decarbonization pathways provide us with guidance on the rate at which clients in a given sector need to reduce their GHG emissions in order to reach net-zero by 2050.

**Step 3:** Setting our priorities and reduction targets. Having measured our financed emissions and benchmarked them against the appropriate decarbonization pathways, we prioritized our activities in terms of their climate impact and our scope for change, following the NZBA guidelines. We then set 2030 GHG emissions reduction targets for the sectors. Our ambition is for the majority of our portfolio to be compliant with a <1.5°C warming scenario by 2030.

**Step 4:** Making it happen. To achieve our targets for the selected sector/region segments of our portfolio, we have drawn up transition plans to achieve the targeted GHG emissions reductions for each combination.

In the **Metrics & Targets** section we provide a more detailed explanation of the current status and our ambitions for each of these elements.
Metrics & Targets
Managing the Climate Impact of Our Own Operations

The GHG Protocol distinguishes between scope 1, 2, and 3 greenhouse gas emissions. In this section we disclose the emissions that are directly (scope 1) and indirectly (scope 2) associated with our business operations, and key elements of our supply chain emissions (scope 3).

The GHG Protocol Corporate Standard classifies a company’s direct and indirect GHG emissions and requires that companies account for and report all scope 1 emissions (i.e., direct emissions from owned or controlled sources) and all scope 2 emissions (i.e., indirect emissions from the generation of purchased energy consumed by the reporting company). The Corporate Standard gives companies flexibility in whether and how to account for scope 3 emissions (i.e., all other indirect emissions that occur in a company’s value chain). The figure below provides an overview of the three GHG Protocol scopes and categories of emissions.

### Scope 1, 2 & 3

<table>
<thead>
<tr>
<th>Scope 1</th>
<th>Scope 2</th>
<th>Scope 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>Indirect</td>
<td>Indirect</td>
</tr>
<tr>
<td>CO₂</td>
<td>CH₄</td>
<td>N₂O</td>
</tr>
<tr>
<td>HFCs</td>
<td>PFCs</td>
<td>SF₆</td>
</tr>
</tbody>
</table>

- **SCOPE 1 Direct**: Company vehicles, transportation and distribution, processing of sold products, use of sold products, end-of-life treatment of sold products, leased assets, franchises, investments.
- **SCOPE 2 Indirect**: Purchased goods and services, fuel and energy related activities, capital goods, transportation and distribution, waste generated in operations, business travel.
- **SCOPE 3 Indirect**: Leased assets, employee commuting, company facilities.

GHG Protocol
Our Operational Emissions

For over 20 years we have been calculating our own operational carbon footprint and since 2007 we have offset our residual emissions. We have significantly reduced the carbon footprint of our own operations since 2018. The majority of our operational GHG emissions sources fall into three categories: the use of electricity, heating, cooling and natural gas in our offices, business-related travel by car, and business-related travel by plane. The table below gives an overview of the our operational emissions over the last four years.

### CO2 Emissions (in metric tonnes of CO2)

<table>
<thead>
<tr>
<th>Emission source</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scope 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of natural gas</td>
<td>6,413</td>
<td>7,481</td>
<td>7,847</td>
<td>11,440</td>
</tr>
<tr>
<td>Use of other fuels</td>
<td>188</td>
<td>30</td>
<td>51</td>
<td>60</td>
</tr>
<tr>
<td>Use of air conditioning</td>
<td>2,010</td>
<td>2,017</td>
<td>2,056</td>
<td>1,962</td>
</tr>
<tr>
<td>Lease mileage driven</td>
<td>9,920</td>
<td>12,000</td>
<td>17,380</td>
<td>21,742</td>
</tr>
<tr>
<td><strong>Scope 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of electricity</td>
<td>34,902</td>
<td>50,162</td>
<td>74,888</td>
<td>83,911</td>
</tr>
<tr>
<td>Use of heat</td>
<td>642</td>
<td>732</td>
<td>958</td>
<td>968</td>
</tr>
<tr>
<td><strong>Scope 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business car mileage</td>
<td>2,856</td>
<td>4,136</td>
<td>4,088</td>
<td>5,231</td>
</tr>
<tr>
<td>Business air mileage</td>
<td>850</td>
<td>5,560</td>
<td>18,510</td>
<td>18,110</td>
</tr>
<tr>
<td>Use of paper</td>
<td>396</td>
<td>560</td>
<td>622</td>
<td>922</td>
</tr>
<tr>
<td><strong>CO2 emissions, Total CO2 emissions</strong></td>
<td>58,187</td>
<td>82,678</td>
<td>126,441</td>
<td>144,347</td>
</tr>
<tr>
<td><strong>CO2 emissions per full-time equivalent</strong></td>
<td>1.3</td>
<td>1.9</td>
<td>2.9</td>
<td>3.3</td>
</tr>
<tr>
<td>Use of electricity in accordance with market-based calculation method</td>
<td>6,435</td>
<td>7,459</td>
<td>17,088</td>
<td>21,468</td>
</tr>
<tr>
<td>Climate footprint in accordance with market-based calculation method</td>
<td>29,720</td>
<td>39,075</td>
<td>68,640</td>
<td>81,904</td>
</tr>
<tr>
<td>Climate footprint per FTE in accordance with market-based calculation method</td>
<td>0.7</td>
<td>0.9</td>
<td>1.6</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Benchmarking Our Operational Emissions

In order to set our emissions reductions targets, we referred to science-based benchmark decarbonization pathways for the three main categories of emissions: real estate, lease cars, and air travel. The reference benchmarks used below are physical intensity reduction pathways based on a 1.5°C scenario. They show the required rate at which GHG emissions intensity must be reduced in order for the activity to be aligned with the goal of limiting global warming to 1.5°C.

**Real Estate**

To benchmark the emissions reductions for our Dutch real estate portfolio (Rabobank Group Real Estate NL) we use the Carbon Risk Real Estate Monitor (CRREM) methodology, as it is a leading European standard for the operational decarbonization of real estate assets.

1 The NZBA prescribes that banks must set targets in line with a 1.5°C warming scenario for 2030 for at least a significant majority of its emissions. In this report we interpret “significant majority” as a minimum of 67% of the emissions of our own operations, in which it is possible to arrive at multiple scoping scenarios for this significant majority. We have chosen to focus on the emissions from Real Estate Rabobank Group NL (including subsidiaries BPD and DLL) and Mobility Rabobank Group NL (including subsidiaries BPD and DLL), where mobility refers to lease cars and air travel. The combined emissions from Real Estate Rabobank Group NL and Mobility Rabobank Group NL amount to a total average of 67% of our own operations emissions in the last five years. In our next report, we aim to extend this preliminary scope to our international operations emissions. We have not yet been able to benchmark the emissions of our international offices and set subsequent reduction targets. However, it is our ambition to house our operations in the most sustainable buildings available.
Mobility
We use the International Energy Agency Roadmap “Net-Zero Emissions by 2050” (IEA) scenario as our benchmark methodology for the GHG emissions related to our use of lease cars in the Netherlands and business flights (Rabobank Mobility NL). This metric provides specific pathways for the transport sector, split into road transport and air transport.

Offsetting
Despite the progress we have made in reducing our operational emissions and our continuing efforts to further reduce them, residual emissions remain and are unlikely to be reduced to an absolute zero in the near future. Therefore, we will rely to some extent on offsetting to “neutralize” these remaining emissions to achieve our net-zero ambition. We have made recent policy decisions to implement the following guidelines:

- Our primary focus is on reducing our own carbon emissions in addition to the need for carbon offsets. Meanwhile, unabated emissions will be compensated.
- We aim to compensate our carbon emissions permanently by purchasing permanent removal credits. Our ambition and planning up to 2030 is to increase the share of permanent removal credits of our total carbon offset to 100%.
- As long as permanent removal credits are not sufficiently available/affordable on the market, we will compensate our carbon emissions through a mix of additional avoidance and (non-permanent) removal credits. In time, we expect more and more permanent removal credits (long carbon cycle), which also match our other policy requirements, to become available.
- In the short term, and prior to the availability of permanent removal credits, we will purchase non-permanent removal credits. We will set up and keep a record of the metric tons of carbon temporarily stored through non-permanent removal credits (short carbon cycle), including the guaranteed period of carbon storage of the carbon credits applied, allowing us to renew the storage of our carbon emissions until this carbon can be stored permanently.
- Part of the short-term carbon offset mix is also the avoidance type of carbon credits. Avoidance credits prevent fossil fuels from being drawn out of the earth (keeping them stored in their long-term carbon sinks, within the long carbon cycle) and are, therefore, permanent and the most effective in the short term. But with investments in renewable energy on the rise, the credibility of these types of projects will diminish in the long-term, because they will no longer be additional to what the market and governments will be able to realize without these credits.

The table below shows our planned roadmap for transforming our carbon-offset portfolio (types) from avoidance to removal:

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</tr>
</thead>
<tbody>
<tr>
<td>Avoidance</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>89%</td>
<td>78%</td>
<td>67%</td>
<td>56%</td>
<td>45%</td>
<td>34%</td>
<td>23%</td>
<td>12%</td>
<td>0%</td>
</tr>
<tr>
<td>Removal (minimum percentage)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>11%</td>
<td>22%</td>
<td>33%</td>
<td>44%</td>
<td>55%</td>
<td>66%</td>
<td>77%</td>
<td>88%</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
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<td>100%</td>
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<td>100%</td>
</tr>
</tbody>
</table>
Operational Emission Reduction Targets

As the above graphs indicate, the GHG emissions intensity of our Real Estate and Mobility activities are currently on the right track to comply with a <1.5°C warming scenario. Nonetheless, it is our goal to continue to reduce our operational footprint. With this in mind, we have set 2030 reductions targets for both activity categories.

Operational Emission Reduction Sub-targets

Our own ambition and the climate commitments we have already made require us to set targets for 2030 to reduce emissions produced by our own operations. We are introducing the following sub-targets and initiatives:

Real Estate NL
- In 2030, all property buildings will have an energy label of A++;
- In 2030, all property buildings will need to perform in line with the obtained energy label;
- In 2030, at least 50% of the rental buildings will need to perform in line with the obtained energy label;
- In 2030, at least 50% of all buildings (rental and property) should no longer use natural gas;
- In 2030, at least 35 kWh per m2 of renewable energy generation, and
- In 2030, at least 40% of all substitutions result in an energy reduction.

In addition to these plans, Real Estate NL will continue to optimize the number and size of Rabobank’s offices, which is expected to result in fewer m2 by 2030, thus also positively impacting the absolute CO2 emissions.

Mobility NL – Lease Cars
We have signed the covenant of the Coalitie Anders Reizen in which we commit to the stricter target of having the NL lease car fleet consist of 100% electric cars by 2025.

Mobility NL – Air Travel
The business flights policy (Global Standard on Business Travel Rabobank Group) of 2021 will help us to lower emissions per km per passenger. With only limited options to reduce the emissions per km of air travel, the main option is to fly economy class instead of business class. Economy class flights have lower CO2e emissions than business class flights, because they have more seats available (and therefore lower emissions per km per passenger). Hence; in our business flights policy it is stipulated that economy class is the default option and the train is the default means of transportation for distances <600km in Western Europe.
Next Steps

Based on the standards of the UN Clean Development Mechanism and the Verified Carbon Standard, we recently have made policy decisions to implement guidelines for our purchase program to compensate our unavoidable emissions. The following key requirements make up part of these guidelines: compensation projects /programs must be real, additional, measurable, permanent, verifiable, and unique.

The next step will consist of selecting suitable carbon compensation projects and using these guidelines as an assessment framework for the purchase of carbon compensation projects and/or credits.

Ekoplaza First Customer for Rabobank Loan to Cut Food Waste

The Challenge

Around one-quarter of the calories the world produces are thrown away. They’re spoiled or spilled in supply chains or are wasted by retailers, restaurants, and consumers. Consequently, food losses and waste are responsible for approximately 6% of global greenhouse gas emissions. Many retailers and restaurants simply factor in food waste in their model. And incentives to reduce waste are scarce.

The Solution

Sustainability Linked Loans, where customers are rewarded with a lower interest rate if they achieve their sustainability goals, have been around for some time. But Rabobank developed the SDG 12.3 Loan specifically to incentivize reducing food waste. It rewards the reduction of food waste with lower interest rates. Organic supermarket chain Ekoplaza was the first customer to receive this new SDG 12.3 Loan.
Managing the Climate Impact of Our Financed Emissions

Scope 3 Emissions
Scope 3 emissions are a company’s indirect emissions linked to upstream and downstream activities in the value chain. Scope 3 emissions are divided into 15 categories. Scope 3 Category 15 emissions are indirect emissions related to investments and financing. They are often referred to as “financed emissions”, and constitute the vast majority of financial institutions’ GHG emissions. Earlier this year (February 2022), in our 2021 Impact Report, we disclosed the 2020 financed emissions of 85% of our climate-material (See Annex Climate Materiality) on-balance sheet assets. In this report, we provide a summary of that disclosure. For a full overview of our financed emissions including the methodologies, please see our Impact Report.

The next figure provides an overview of 2020 Scope 3 financed emissions of our clients we measured using the PCAF guidelines. Where possible, we have used self-reported emissions, but since most clients do not currently provide such data, the majority of carbon footprint measurements rely on estimates that were calculated using different types of estimates and proxy indicators.

Avoided emissions via renewable energy portfolio: 5.6 Mt CO2e

Total assets
EUR 632 billion
Of which 70% climate material* assets
- of which 85% covered** by
financed emission estimation

On-balance exposure in billions of euros (base year 2020)
- Loans to private individuals
  - Residential real estate
- Dutch business clients
  - Food & Agriculture
  - Trade, Industry & Services
  - Commercial Real Estate
- Wholesale & Rural
  - Wholesale corporate clients
  - Rural Clients
- Leasing International
  - Tractor assets
- Other partially climate material assets
- Other non-climate material assets
  - Loans and advances to banks
  - Derivatives

Total
632

* Due to data limitations and the risk of double-counting, we have included only our clients’ scope 1 and 2 emissions in our methodology.

** Financial emissions coverage figures are calculated on gross exposure figures. For details on the estimation assumptions and methodologies, please refer to the financed emissions methodology in the Annex section of our Impact Report.

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1 About Climate Materiality:
We prioritize certain sectors following the UN Guidelines for Climate Target Setting for Banks.
In 2020, we published an overview of which assets are considered to be climate-material. Rabobank Climate Commitment Disclosure of Progress
Next Steps
We have set 2020 as our baseline year, and disclosed our GHG emissions for 85% of our climate-material on-balance sheet assets. We will expand the scope of our financed emissions calculations with the ambition of having 100% of our climate-material assets in scope by 2025. One of our main priorities is to include the financed emissions of high-emitting sectors in our trading portfolio in future disclosures, as this portfolio contains significant trading of products from high-emitting sectors (F&A, Energy, and Mining & Metals).

We will continue to improve the quality of the data we use in our financed emissions calculations as more clients start to disclose their GHG emissions and the availability of proxy indicators improves. In particular, we expect a significant increase in reported emissions from our European Wholesale and large corporate clients over the next three years as EU regulations, such as the Corporate Sustainability Reporting Directive, are finalized and implemented. We are also introducing carbon calculators to our farming clients in countries and regions like Oceania, the US and Brazil to help them get better insights into their carbon footprints.

We will continue to follow and adopt PCAF guidance on refinements to methodologies for calculating financed emissions. We also anticipate adopting the new GHG Protocol Land Sector and Removals (expected in Q2, 2023) for calculating biogenic financed emissions in our F&A portfolio. Initial indications suggest that the new protocol will include emissions and removals related to land use and land-use change, which would have a significant impact on the financed emissions of our F&A portfolio.

Road to Paris Client Case
Firing Up Sustainable Chili Farming in China
The Challenge
In China's south-western provinces many farmers are trapped producing low-yield, non-profitable crops that are heavily impacted by environmental risks. Consequently, the next generation of farmers often has no choice but to abandon their family farms to move to cities to earn money through other means, leaving their communities without the support to continue operating.

The Solution
The world's growing appetite for chili pepper products is turning the plant into a valuable commodity. China's south-western provinces are well positioned for chili pepper cultivation, but many small-scale farmers are not yet capitalizing on this demand. A new Rabobank loan, with risk-sharing by Agri3Fund, will enable Chongqing Agricultural Chain Corporation Ltd. (CACC), a large farm inputs company, to support growers in the region to earn more while improving farming practices. CACC will provide inputs and purchase the harvest at a guaranteed price. CACC has also agreed to implement sustainability measures – including plans for soil protection, water management, and climate change mitigation – and offer technical assistance to help the smallholders produce more sustainably.
Decarbonization Pathways

Different sectors of the economy will decarbonize in different ways at different rates. Wherever possible, we use science-based decarbonization pathways aligned with the maximum 1.5°C warming scenario to benchmark our sector portfolios to determine the future rate of decarbonization needed to reach net-zero by 2050.

Decarbonization pathways are based on carbon or GHG emissions budgets: the amount of GHG emissions allocated to a given economic sector in a given region. These budgets can be set by national governments as part of their climate commitments (e.g., Nationally Determined Contribution (NDC) plans), or by other actors, such as the IEA.

The pathways are most commonly expressed in terms of absolute emissions reductions or emissions intensity reduction. Nationally Determined Contribution linked pathways often use absolute emissions because governments have determined a carbon budget for a given sector or the economy at large. For our Dutch F&A sector/region combinations we have used absolute emissions reduction pathways derived from the Dutch climate agreement. Other sectoral pathways often use physical emissions intensities, which show the amount of emissions associated with a physical production process (e.g., CO2e/kWh, CO2e/m2, tCO2e/ton of product). In most cases, we prefer to use physical emissions intensity metrics as we regard them as a better indicator of the real economy changes to the emissions profile of a given sector, whereas absolute emissions for a financial institution may simply be the result of changes in exposure to a given sector. Helping clients in high-emitting sectors of the economy transition to a low-carbon future will, in many cases, require transition financing. The resulting increase in exposure could lead to a short-term increase in financed emissions, but a decrease in the emissions intensity of our portfolio. In the mid- to long-term, these intensity improvements should translate into a reduction in financed emissions as well.

For high-emitting economic activities where the emission source is the burning of fossil fuels (e.g., transport, power generation, and heavy industry), organizations such as the IEA have developed widely used decarbonization scenarios. Unfortunately, not all sectors are yet covered and we were unable to find a suitable science-based pathway for our farm tractors portfolio. For the F&A sector, where the primary source of emissions is biogenic (e.g., deforestation and enteric fermentation), the recent release of the SBTi FLAG guidance represents an important step in establishing internationally accepted science-based decarbonization pathways.

In the F&A non-Dutch sector/region combination graphs, we show an orange dot and two lines. The orange dot represents where our portfolio is in our baseline year 2020 in emission intensity basis and the blue line is the science-based reduction pathway towards 2050. For these combinations, we use SBTi FLAG default intensity data (CO2e/kg fresh weight), assuming our client portfolio is on this line as we are not yet able to calculate our clients’ financed emissions for those rural F&A sectors. The orange dot and connecting blue line correspond to the sector/region specific, on-farm emissions (including feed) from agricultural activities, which is closest to the accounting scope of our financed emissions estimates in the table "Reducing Emissions per Sector/Region." However, reducing on-farm emissions is only part of the equation; in fact, deforestation and land-use change account for half of the sector’s emissions.

The light blue, dotted line in the graph corresponds to the science-based reduction pathway including total net on-farm, land-use change (LUC) emissions and removals (e.g. from re-vegetation, afforestation, and soil carbon on managed land). Our financed emissions estimate today does not include LUC emissions or removals, as those are not yet within the governing financial sector PCAF reporting guidance. Therefore, the orange dot and connecting dark blue line is an indication of our portfolio. We will continue to improve our financed emissions estimate in the future to include land-use change emissions and biogenic removals.

The following dashboards provide an overview of the decarbonization pathways we have used to benchmark different sectors and regions of our portfolio. In the following chapters, we examine each pathway on a sector-by-sector basis.
Decarbonization Pathways Dashboard

Dairy Netherlands
€ 11.3 billion outstanding 4.1 Mton CO2e financed emissions >0.8 Mton Reduction target 2030

Pig Farming Netherlands
€ 1.6 billion outstanding 0.8 Mton CO2e financed emissions >0.3 Mton Reduction target 2030

Horticulture Netherlands
€ 3.0 billion outstanding 5.1 Mton CO2e financed emissions 2.2 Mton Reduction target 2030

Beef Australia
€ 2.9 billion outstanding 1.4 Mton CO2e financed emissions >10% Reduction target 2030

Beef United States
€ 1.5 billion outstanding 5.1 Mton CO2e financed emissions >17% Reduction target 2030

Dairy New Zealand
€ 4.3 billion outstanding 1.9 Mton CO2e financed emissions >12% Reduction target 2030

Soy Brazil
€ 1.9 billion outstanding 0.6 Mton CO2e financed emissions >49% Reduction target 2030

Residential Real Estate
€ 18.0 billion outstanding 2.1 Mton CO2e financed emissions >30% Reduction target 2030

Commercial Real Estate
€ 19.4 billion outstanding 0.3 Mton CO2e financed emissions >27% Reduction target 2030

Transport
€ 5.1 billion outstanding 1.4 Mton CO2e financed emissions >37% Reduction target 2030

Energy
€ 3.3 billion outstanding 0.4 Mton CO2e financed emissions >40% Reduction target 2030

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Reducing Scope 3 Emissions

Having determined the baseline emissions financed for an estimated 85% of our climate-material portfolio, we have now set 2030 intermediary decarbonization targets for 12 high-emitting sector/region combinations. Together these sectors account for 70% of our climate-material on-balance sheet loans and more than half of the financed emissions we disclosed in our 2021 Impact Report (26.9 of 46.3 Mt CO2e) which we will update regularly.

We have prioritized these sectors following the guidelines set by the NZBA, which recommends that banks focus their efforts on the high-emitting sectors where they have the most exposure and/or influence (data and methodologies permitting). The table indicates the extent of our exposure in these sectors, our portfolio’s estimated financed emissions for the sectors (as disclosed in our Impact Report), the PCAF data quality score1 associated with the financed emissions, the physical intensity metrics (where available), our reduction targets, and the benchmark reference scenarios we used to set our targets.

Despite significant data and methodological challenges, not least of which our inability to determine the current carbon intensity of our own portfolio, we have elected to set preliminary GHG reduction targets for our F&A sectors based on the high-emitting sectors where they have the most exposure and/or influence. This is also the case for the Transport sector (with a PCAF data quality score of 5) associated with the financed emissions, the physical intensity metrics (where available), our reduction targets, and the benchmark reference scenarios we used to set our targets.

We have done this because we believe that the GHG emissions intensity of production in these sectors/regions needs to decrease. We also believe that while the exact trajectory may not be known, the general direction of travel is clear. Finally, we feel that as we have the ambition to be the bank for the Food Transition it is important to be as transparent as possible about our intentions, as well as the challenges we still face in trying to precisely define and realize them.

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1. PCAF data quality scores provide an indication of the level of data granularity and robustness and range from a score of five for the least granular and robust to one for the most granular and robust. For more information please see the Our Impact in 2021.
Making It Happen

Our plans to achieve our Paris Alignment targets use a combination of three types of levers or interventions:

1. Helping clients transition to a low-carbon future
We do this by providing our clients with knowledge and insights into how they can decarbonize their activities, financial products (sustainable finance) to support their transition, and financing new innovations that will accelerate their efforts.  

2. Helping move the system to a low-carbon future
The transition to a sustainable economy requires systemic change. We support this by engaging with stakeholders at different levels in the economy and society.

3. Optimizing our portfolio for sustainability
While the composition of our portfolio means that most of our focus is on helping our clients and their sectors transition to a low-carbon future, we also make conscious choices in growing our portfolio in a sustainable manner.

We are deploying these interventions in different combinations at the group level as well as through our Energy and Food Transitions.

Banking the Transitions
At the Rabobank Group level, we have taken a number of steps to support the overall transition efforts:

Help Clients Transition
Knowledge
With over 140 analysts around the globe, RaboResearch covers topics related to (Dutch) Economics, Global Financial Markets and Food & Agriculture. The research agenda is also aimed at raising awareness regarding Paris Alignment and increasing knowledge about becoming ParisAligned.
Sustainable finance
Financial products exclusively aimed at financing green projects, de-risking sustainable initiatives or at offering a sustainability linked financial stimulus. Centralized Sustainable Business Development departments offer specialized support and consultancy to both colleagues and clients.
Innovation
Continuous effort on innovative new products and business models that reconcile economy and ecology.

Stimulate System Change
Clients
We engage clients on the need for system change to align with net-zero pathways.
Industry & supply chains
We leverage our position in the relevant industries, sectors and supply chains to push for more cooperation on climate topics.
Governments & public sector
Centralized Public Affairs and network departments underline the need for system change and support governments, supranational organisations and NGOs at global stages such as the World Economic Forum and the UN Food Systems Summit.
Policies & conditions
Our sustainability policies provide a clear indication of what we expect from our clients and the type of business activities that we will and will not finance.
Sustainable new business
Through Rabo Investments we will grow our portfolio with new business that is already Paris aligned.
Sustainable high performers
We build the ability to assess the sustainability performance of our clients.

Optimize Portfolio

Help Clients Transition

Stimulate System Change

Optimize Portfolio

1 We use the terminology sustainable finance, while this is subject to market practices and developments within the regulatory framework. Within Rabobank a framework is being developed in which we will determine what kind of products qualify as "sustainable finance". However, the products described are all finance initiatives described are supporting the transition.
To encourage our clients to make the transition, we have put pricing incentives in place in the form of lower interest rates for clients with certain eco-labels (Impact Loan), sustainability KPIs (Sustainability-linked loans) or with concrete sustainability investments (Green Loan). For the Dutch dairy sector, we have taken this a step further by introducing a pricing incentive applicable to all financing products for (sustainable) frontrunners in the Dutch dairy sector (for clients with more than EUR 1 million in financing). We will expand this incentive to lower interest rates for frontrunners and higher rates for “laggards” for a broader group of clients starting with other F&A sectors before the end of 2022 and for Industry, Transport and Commercial Real Estate sectors in 2023.

Next to the aforementioned pricing incentives, we will continue to engage in an active dialogue with our clients to support them in staying, or getting, their businesses aligned with 1.5°C pathways. Over the next two years, we will hold individual sustainability dialogues with all our Dutch corporate clients with more than EUR 1 million in financing. From 2023, we will require all corporate clients (financing >EUR 1 million) that are required by law to report on their sustainability performance and that submit a new financing request, to start periodically submitting those reports to the bank. We will use those reports to discuss their progress on sustainability. By 2024, we will have an individual Sustainability Account Plan for all our Wholesale clients. And from 2027 (or earlier if required by law), we will only finance clients in high-emitting sectors, as defined by the NZBA, if they have science-based carbon emissions reductions targets in place for 2030 and beyond which are aligned with a pathway to net-zero.

In addition to these central organization and group-wide steps, we recognize that every sector and every client has their own journey to Paris Alignment. Their ability to make the transition depends on many different stakeholders in and around their respective value chains. This is particularly evident when we compare the differences in the transition paths for Energy Transition clients and Food Transition clients. The former are primarily focused on implementing technology changes to abate fossil fuel-related emissions, while the latter are mainly dealing with reducing biogenic emissions from livestock and natural processes like land-use change.

In recognition of these important distinctions, we established dedicated transition teams for the Food Transition and the Energy Transition. These two teams are part of our client-facing business domains and are responsible for helping our clients transition. The transition teams cooperate with our central Sustainability department, which has overall responsibility, and our business lines, which lead our client engagement. We are all working daily to achieve our climate and broader sustainability objectives. Each transition team reports to a member of the Managing Board and has dedicated resources.

The following sections will provide more detail on how each of these transitions is using the three levels or interventions mentioned above to help reach our Paris Alignment goals.
**Food Transition**

To increase our focus on the Food Transition we have developed a group-wide Food Transition vision. This vision is aimed at the overall transformation of the F&A sector. In the first stage we are focusing on the climate-related planetary boundaries, and a select number of biodiversity-related topics such as nitrogen deposits in the Netherlands. Achieving a significant reduction in the financed emissions of our F&A portfolio is a priority in this vision. Stopping deforestation plays a critical role, particularly in sensitive biomes. With this in mind, we have a clear stance on deforestation in Brazil:

- We do not finance any deforestation, even if legally allowed;
- We do not on-board, or maintain, customers involved in illegal deforestation that occurred after January 2005;
- We do not accept as collateral lands in the Amazon biome which has been deforested after 1 January 2018, even if done legally;
- We have standards and procedures in place to minimize the risks of accidentally becoming involved in financing deforestation (but we know the risk is not zero). More details and the rationale behind our position on deforestation in Brazil can be found in the Brazil sector/region page of this report.

A precondition for the required Food Transition is that it is a “fair and just” one and that the benefits and burdens of a sustainable food system are equally and proportionally distributed among stakeholders in the supply chain throughout different (developing, emerging, and developed) regions in the world. In other words, that requires ensuring that smallholder farmers in developing and emerging regions will have improved access to finance, knowledge, and markets and that they are enabled to sustainably produce enough food to become self-sufficient and ultimately commercially viable.

- Through **Rabo Partnerships** we help build more effective financial systems in developing and emerging regions to improve smallholder farmers’ access to finance and their ability to produce more sustainably.
- Through **Rabo Foundation** we offer organizations that work with smallholder farmers in developing and emerging regions access to money, knowledge, and our network to increase smallholder farmers’ self-sufficiency and ability to produce more sustainably.

The table provides examples of the different levels we can apply to help achieve our Food Transition goals.
Energy Transition
The unprecedented rise in global energy prices has sent shockwaves through E.U. economies and beyond. While the full extent of the impact is still unfolding, the need to accelerate the transition to renewable energy sources, as well as the infrastructural and policy challenges preventing this from happening, have become all too apparent. With this in mind, we will further increase our financing to renewable power generation. By 2030 we aim to add an additional EUR 10 billion in financing to this sector. We will manage our fossil fuels portfolio in line with the IEA Net-Zero Emissions by 2050 (NZE) scenario:

- From 2023, we will gradually reduce the combined volume of traded oil and gas we finance. By 2030, this combined volume will be 20% lower than in 2022;
- Within this reduced combined volume, the volume of traded gas will grow by 20% (v.s. 2022) in recognition of the role that gas can play as a transition fuel towards 2030. This means that we will reduce the volume of traded oil we finance by more than the NZE scenario dictates and,
- By the end of 2024, or earlier if possible, we will communicate physical volume reduction targets for our traded oil and gas portfolio.

The Netherlands’ housing market is currently at an impasse. Housing shortages are increasing and newcomers to the housing market still do not have good access to affordable homes. On top of that, the energy crisis plummeted hundreds of thousands of households into energy poverty. All the more reason for a “just” energy transition; greening one’s home should be financially feasible for lower income households as well. And newcomers in the housing market should have access to affordable homes. For the latter, we developed Rabo SmartBuilds, a flexible solution for urgent housing needs. SmartBuilds are factory-built, full-fledged houses that are low in emissions.

An important part of the Energy Transition is making buildings and transport across all sectors more sustainable. In 2023 we will start introducing a required average energy label for different types of business real estate (e.g. office, industry, hospital, and retail) over time to meet the Paris 2030 goals. We will present minimal energy label requirements per type of real estate and these requirements will become more stringent over time. We will also present a similar concept of energy labels for different means of transport and type of combustion engine (also once the financing of diesel cars and vans will no longer be possible).

Banking the Energy Transition

Help Clients Transition
Knowledge
- In the Netherlands we offer a scan that provides insight in available measures to ‘green’ homes (e.g. insulation, solar panels, heat pumps).
- For commercial real estate owners we offer similar tooling e.g. www.rabozaa.comまい вокезд.

Sustainable finance
- For home-owners we offer a sustainability discount, green mortgage and a green depot, which - together with the aforementioned scan – is a holistic offering for our clients.
- Commercial real estate clients can benefit from favorable interest rates for better energy labels and programs to encourage the installation of solar panels on roofs and the improvement of energy labels.

Innovation
A new feature in our banking app gives insight in home-owners energy usage (voluntary participation).

Stimulate System Change
Clients
- To enhance electrification, we support the set-up of energy cooperatives and offer specific financial solutions.
- Our e-mobility project offers solutions for heavy equipment and long-haul road logistics as well as for zero emissions LCV fleets.

Industry & supply chains
In the Commercial Real Estate domain, we have an advocacy role, are an active player and sounding board for including (but not limited to) the Dutch Banking Association, the government, IBM, and NVM.

Governments & public sector
In the Netherlands we provide feedback on the government’s climate plans and have contributed to the sustainability paragraph for the real estate valuation process.

Optimize Portfolio
Policies & conditions
- Our Commercial Real Estate policy provides thresholds on energy labels.
- For our European Wholesale business, we have an energy policy in place with underwriting criteria.

Sustainable new business
- Our investment arm, Rabo Investments, increasingly focuses on e-mobility and offshore & marine.
- Through Project Finance we finance large projects in renewable energy.
- Acquisition of new business is aimed at investing in the reduction of emissions.

Sustainable high performers
- We build the ability to assess the sustainability performance of our clients.
- We differentiate in our underwriting criteria for various commercial real estate segments. This will help us optimize our portfolio for sustainability.
Sector/Region Transition Plans

- Dairy Netherlands
- Pig Farming Netherlands
- Horticulture Netherlands
- Beef United States
- Beef Australia
- Dairy New Zealand
- Soy Brazil
- Tractors
- Residential Real Estate
- Commercial Real Estate
- Transport
- Energy
**Dairy Netherlands**

**Market Development**

Dairy farming involves a wide range of sustainability aspects. Current market circumstances add to the challenge of reconciling the additional costs related to implementing climate measures (like manure systems and low emission barns with daily manure removal) with a healthy business model. Nonetheless, based on the Dutch coalition agreement and the Fit for 55 package, an additional reduction of emission-levels is needed and expected.

Reduction of nitrogen and CO2e emissions are the most prominent among the sustainability aspects in the Dutch dairy sector. Dutch livestock has to reduce nitrogen emissions by 50% in 2030 compared to 2019. The Dutch government has stated its intention to reduce nitrogen deposits, including herd size reduction. We expect that these plans will also result in significant reductions in GHG emissions.

The current sector 2030 CO2e reduction target of 0.8 Mton will likely be achieved. Reducing these emissions will have a significant impact on the sector. The current government’s plans, which are based on the E.U.’s Fit for 55 package, will require the sector to make additional reductions. Specific details are yet to be released, but based on current government plans, we foresee that GHG emissions will likely need to be reduced from 13 Mton (2020) to 10-11 Mton in 2030.

**Transition - Reaching Net-Zero**

On-farm emission reduction is an important focus area to reconcile future-proof business models with reduction targets. As a transition bank we believe that we will have maximum impact by helping our clients to comply with a <1.5°C warming scenario. This means we take an active role and offer propositions for clients ceasing their business, movers, transitioners, extensifiers, and innovators.

Our primary role is to provide financing that will support the transition to more sustainable practices that will realize GHG reduction targets. Next to financing, we leverage our knowledge and networks to broaden our scope of GHG emission reductions (e.g. emissions arising from oxidation of peatlands and energy use, upstream feed- and fertilizer-related emissions as well as downstream emissions). Furthermore, we will continue to adjust our financing conditions over time to reduce negative climate impacts. By doing so we aim for an integrated approach that includes other sustainability aspects in addition to food security.

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This graph shows the rate of the decrease over time in the absolute GHG emissions for the dairy sector in the Netherlands as stipulated by the Dutch Climate Agreement. As we wait for the government to define final reduction targets per subsector, we have already started our journey towards a clear target in 2030 based on the current sector target of 0.8 Mton. Our aim is to contribute 0.8 Mton to the achievement of this target. Due to data constraints, we are currently not able to calculate the exact GHG emissions of our portfolio. Therefore, we have set our preliminary 2030 emission reduction target based on the sector average. We will update our targets when the new government reduction plans are worked out for the sector.

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Our Road to Paris - Metrics & Targets
We are one of many players in the dairy value chain. Meeting the reduction targets requires a unified effort from all these players, where some will have more impact than others. As we wait for the government to define new reduction targets we have already started our journey towards a clear target in 2030. In doing so, we realize that there are various dependencies to deal with, and that we will have to learn and adapt along the way. Based on our initial calculations, we believe that we can help the sector reduce emissions by 0.8 Mton CO2e between now and 2030. We will continue to search for ways to increase this amount, which we will incorporate in future reduction plans.

**Initiatives**

**Help Clients Transition – Products & Services, Innovation, and Knowledge**
- We are developing and offering a range of financing products for movers, transitioning farmers, extensifiers, clients ceasing their business, and innovators (Unive DZU, impact and innovation loans).
- We are developing a GHG emissions dashboard with an integrated, farm-specific footprint to help our clients identify climate risks and opportunities in their operations.
- We offer sustainability linked loans that incentivize setting and meeting sustainability objectives and our green loans provide interest rate discounts for sustainable frontrunners.

**Change the System – Engagement Strategy**
- We play an active role in the transition to a sustainable agricultural sector. For example, by facilitating the area-based approach (gebiedsgerichte aanpak) and by offering sector branch organizations and the government our expertise in finance to set up instruments that are needed.
- Dutch dairy farmers are involved in Rabo Carbon Bank’s pilots to enhance dairy farmers’ carbon sequestering ability.

**Optimize the Portfolio – Policies & Conditions**
- In line with the recent government plans on reducing nitrogen, we expect to see a reduction in our exposure to the Dutch dairy sector.
- Policies with increasing stringent underwriting criteria, rewarding out-performers (on footprint), and incentivizing under-performers will help optimize our portfolio for sustainability.
- We will build our ability to assess our client’s sustainability performance and to develop financial products and concepts that stimulate sustainability performance improvement.

**Road to Paris Client Case**

**Biodiversity Monitor; Reward for Dairy Farmers & Stronger Nature in the Netherlands**

**The Challenge**
Biodiversity is under pressure worldwide. The Netherlands is no exception. As much of the land is being used for dairy, the Dutch dairy sector can potentially be a big part of the solution. But margins are low. And until recently there were no reward schemes for farmers who contribute to improved biodiversity.

**The Solution**
Rabobank, together with the World Wide Fund for Nature and other parties throughout the value chain, has developed a biodiversity monitor. Thanks to the monitor, farmers can assess their scores on eight different aspects, as well as gain insight into areas for improvement. A good score can give a farm a better image, a higher sales price, interesting subsidies, or lower interest rates on their loans.

**Read more**
Pig Farming Netherlands

This graph shows the rate of the decrease over time in the absolute GHG emissions for the Pig Farming sector in the Netherlands as stipulated by the Dutch Climate Agreement. As we wait for the government to define final reduction targets per subsector, we have already started our journey towards a clear sector target in 2030 based on the current target of 0.3 Mton. Our target is to contribute 0.2 Mton. Due to data constraints, we are currently not able to calculate the exact GHG emissions of our portfolio. Therefore, we have set our preliminary 2030 emission reduction target based on the sector average. We will update our targets when the new government reduction plans are worked out for the sector.

Market Development

Pig farming involves a wide range of sustainability aspects. Currently the two main drivers are the reduction of nitrogen and CO2e emissions, next to animal welfare and more circular business models, which will lead to a significant transition of the sector. Dutch livestock has to reduce nitrogen emissions by 50% in 2030 compared to 2019.

The current 2030 CO2e sector reduction target of 0.3 Mton will likely be reached, although current market circumstances will make it challenging to integrate additional costs in existing business models to implement climate measures (like manure systems and low emission barns with daily manure removal). Based on the Dutch coalition agreement and the Fit for 55 package, an additional reduction is needed and expected.

Transition - Reaching Net-Zero

On-farm emissions reduction is an important focus area for creating future-proof business models in line with the reduction targets. The most important drivers of GHG emissions are indirect emissions for feed production, including distribution (53%) and direct emissions from enteric fermentation (45%). Direct emissions reduction can be reached by technical measures and herd-size reduction. As we wait for the government to define new reduction targets, we have already started our journey towards a 2030 target.

Our ambition is to proactively facilitate the transition within the sector. Based on our initial calculations, we believe that we can help the sector reduce emissions by 0.2 Mton CO2e between now and 2030. We will continue to search for ways to increase this amount, which we will incorporate in future reduction plans.
Our ambition is to proactively facilitate the transition within the sector. We support the area-specific approach (gebiedsgerichte aanpak) by offering (financial) products for movers, transformers, innovators, extensifiers and clients who are ceasing operations. In addition, we continue to set more stringent financing conditions based on sustainability criteria, including climate impact. We also (in)directly co-finance several research projects (PPP) in the areas of circularity, barn systems, animal health, among others.

Our target can only be realized if significant steps are made by all parties in the chain including the government. We aim to increase our influence by participating actively within CoViVa, which we see as an important platform for initiating and executing the transition. We use our financial expertise to support the government in setting up the necessary instruments.

We have started this journey towards a clear target in 2030 realizing that there are various dependencies to deal with, so we have to learn and adapt along the way. Future initiatives include rewarding sustainable frontrunners for reducing their CO2 footprint, facilitating clients who want to go out of business with the stoppers proposition, and incorporating pricing grids for reduction targets and/or requiring clients to present an adequate plan on how they will achieve this goal.
**Market Development**

The greenhouse horticulture sector is a high tech sector and has the ambition to be climate neutral by 2040. The most important lever to reduce CO2 emissions is the switch from gas to sustainable heating sources like geothermal or residual heat. Reducing energy consumption, both absolute and intensity based is another important lever. To realize this ambition, climate measures like LED lighting, heat pumps, dehumidifiers, and so on should be taken at company level. These measures, most of which already exist, will also have a positive impact on future energy costs. The main drivers for successful implementation are energy prices and subsidies to cover unprofitable margins within these measures. The energy crisis we are facing right now has a major impact on this transition, since prices have risen by multiple factors compared to 2020 levels. This has a direct and diminishing effect on cash flows and equity positions, needed to finance the transition.

**Transition - Reaching Net-Zero**

Achieving the ambition to be climate neutral requires a unified effort from all stakeholders. Probably by the end of 2022 the Convenant Energietransitie Glastuinbouw 2021-2030 will be signed by the most important stakeholders outlining the path towards 2030. As a bank we take an accelerating role and expect to contribute to the preliminary sectoral target (that ranges from 1.7 up to 2.2 Mton CO2 reduction by 2030) by 1.1 Mton CO2.

**Initiatives**

Given the variety of regional circumstances, we will take a de-central approach to the transition that leverages the local knowledge of our regional teams. Our current focus is to motivate and stimulate our clients in their transition, we believe this is the most effective way to incentivize the market taking steps. Our current initiatives focus on providing financing for geothermal wells and heat pumps, leasing dehumidifiers and LED assimilation lights. Future initiatives like footprint dashboards will provide our clients insight in their footprint and encourage them to reduce their impact, for example by offering interest rate cuts for sustainable frontrunners and by adding pricing grids for intensity-based reduction targets.

For new clients and investments, we have financing conditions in place that require a minimum sustainability score. We foresee an increase in financing hurdles and setting more stringent financing conditions to stimulate the use of sustainable heating sources and reduce energy consumption. We start this journey towards a clear target in 2030 realizing that there are various dependencies to deal with, so we have to learn and adapt along the way. Our target can only be realized if significant steps are made by all parties in the chain, especially those involved in the Convenant Energietransitie Glastuinbouw 2021-2030. Therefore, it is critical that the Convenant Energietransitie Glastuinbouw 2021-2030 plans will be finalized and executed.
This graph shows the estimated GHG emissions intensity reduction needed for the production of beef in the United States. Due to data constraints, we are currently not able to calculate the carbon intensity of our portfolio for beef in the U.S. Therefore, our preliminary 2030 emission intensity reduction target is equal to the regional average. We will set a definitive target once we are able to more accurately plot our portfolio emissions intensity. The orange dot and connected blue line is based on the SBTi FLAG (non-LUC) reduction target, which corresponds to the sector/region specific, on-farm emissions (including feed) and is closest to the accounting scope of our financed emissions estimates. The light blue, dotted line in the graph is based on the science-based reduction pathway including on-farm emissions, LUC emissions and removals.
Our clients are estimated to represent about 11% of the U.S. beef market in revenue terms. We continue to leverage our access along the value chain and our participation in key industry networks to advocate for change. We also use our kitchen table relationship model and strong research capabilities to discuss opportunities with clients.

Help Clients Transition – Products & Services, Innovation, and Knowledge

- From 2023 onwards, our aim is to extend our Carbon Bank’s carbon farming products currently being piloted in the U.S. with cropping clients to beef grazing operations, as well as the Carbon Bank’s carbon reduction products to feedlots (currently being piloted with dairies).
- Further initiatives include RaboTrace, a program in which we work with beef clients along the value chain to provide the blockchain solution BlockTrust to measure sustainability performance based on the U.S. Roundtable of Sustainable Beef sustainability assessment scorecard.

Change the System – Engagement Strategy

- Play a membership and leadership role in the U.S. Roundtable for Sustainable Beef.
- Establish an educational/capacity-building/R&D relationship with Colorado State University/AgNext, focusing on animal protein innovation.

Optimize the Portfolio – Policies & Conditions

- We are working on gaining additional insights into on-farm emissions and identifying opportunities for abatement. In addition, we assess the broader sustainability performance of our clients through our sustainability assessment tool (Rural Client Photo).
- We will continue to work with our clients to ensure that our portfolio’s GHG intensity is in line with the above-mentioned decarbonization pathways.
Beef Australia

### Market Development

Beef is one of the most important agricultural products in Australia. With 44 Mt CO2e, it represents more than 50% percent of the country’s total national agricultural emissions, primarily from methane (>80%) from enteric fermentation. Beef production in Australia mainly uses marginal land and natural rangelands.

In May 2022, the new federal government submitted a revised Nationally Determined Contribution (NDC) to the IPCC, but it still lacks specific reduction targets for the agriculture sector. In 2017, Meat and Livestock Australia (the Australian red meat industry body) committed to a target of becoming carbon neutral by 2030 (with a focus on the potential of sequestration/offsetting).

### Transition - Reaching Net-Zero

The emissions reduction potential of Beef Australia is multi-pronged and will require the stacking of interventions/practices to achieve neutrality. Successful interventions could include the use of feed additives, legumes in pastures, improved genetics, herd management, and carbon sequestration from trees (aforestation and reforestation). Reliable and efficient methods for soil carbon sequestration are still being explored.

From what we know today, the greatest potential for emissions reduction prior to 2030 is from vegetative sequestration and the adoption of methane inhibitors in feedlots. Australia has an established carbon credit offset scheme through the Emissions Reductions Fund, which includes methodologies for agriculture and vegetation. There is currently a risk that carbon credits generated by beef producers will be sold outside the industry, which would limit the beef sector’s capacity to offset its own emissions to achieve carbon neutrality.

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This graph shows the estimated GHG emissions intensity reduction needed for the production of beef in Australia. Due to data constraints, we are currently not able to calculate the carbon intensity of our portfolio for beef in Australia. Therefore, our preliminary 2030 emission intensity reduction target is equal to the regional average. We will set a definitive target once we are able to more accurately plot our portfolio emissions intensity. The orange dot and connected blue line is based on the SBTi FLAG (non-LUC) reduction target, which corresponds to the sector/region specific, on-farm emissions (including feed) and is closest to the accounting scope of our financed emissions estimates. The light blue, dotted line in the graph is based on the science-based reduction pathway including on-farm emissions, LUC emissions and removals.
In Australia we finance approximately 2,000 rural clients with a beef exposure. The rural market share in Australia beef is about 18%. We also work with select beef processors in Wholesale and remain a leading player with a growth strategy to increase market share in the coming years in Australian beef. The decarbonization strategy for this sector/region is focused on a number of concrete initiatives in implementation and engagement.

**Help Clients Transition – Products & Services, Innovation, and Knowledge**
- Introduce carbon farming.
- We provide financing to vegetation-based carbon farming in combination with cattle grazing operations.

**Change the System – Engagement Strategy**
- We are rolling out Carbon Farming & Carbon Neutral Ag workshops in collaboration with the University of Melbourne. As part of these workshops, clients can learn to use the Global Assessment of Functioning (GAF) tool to calculate their emissions. The workshops will be expanded over the coming years to reach all clients with significant exposures. Our network of active Client Councils are another forum we use to engage with our clients on sustainability.
- We engage with the Meat and Livestock industry on the issues of climate change and participate in two Carbon Neutral in 2030 pathway projects. We also work together closely with the National Farmers’ Federation (the highest representative body of the agriculture industry in Australia) and the Australian Banking Association, and are active in the consultative process for the Australian Beef Sustainability Framework.

**Optimize the Portfolio – Policies & Conditions**
- We are rolling out a carbon calculator to provide insights into on-farm emissions and identify the most appropriate abatement measures. In addition, we assess the broader sustainability performance of our clients through our sustainability assessment tool (Rural Client Photo).
- Changes in our portfolio exposure (growth/shrinkage) in the coming years will have a corresponding impact on our financed emissions in the sector without necessarily being related to a real economy change in GHG emissions and removals. Therefore, we will continue to work with our clients to ensure that our portfolio’s GHG intensity is in line with the above-mentioned decarbonization pathways.
### Market Development

In New Zealand, a total of ~4.9 million dairy cows are held in 11,179 herds that occupy 1.7 million (effective) hectares of pasture land. In 2019, New Zealand produced 25.2 billion kg of milk products, making it the seventh largest milk producer in the world. About 95% of New Zealand dairy products are exported, with a total export value of almost NZD 17 billion, or 20% of NZ exports. According to the latest reported data (2019), the primary dairy sector accounted for approximately 22.1 Mt CO2e. Referring to scope 1 emissions, this represents more than a quarter of New Zealand’s national (gross) GHG emissions (82.3 Mt CO2e) or about half of NZ agriculture emissions (estimated at 43.7 Mt) excluding land use, land-use change and forestry (LULUCF). Biogenic methane from enteric fermentation and manure, represents the largest share of on-farm dairy emissions.

The New Zealand government distinguishes biogenic methane from other greenhouse gases and has set a target for reducing biogenic methane by 10% below 2017 levels by 2030, and by 24% – 47% below 2017 levels by 2050. For all other GHG, the government targets net-zero by 2050. New Zealand’s Nationally Determined Contribution sets a headline target of a 50% reduction of net emissions below its gross 2005 level by 2030, and covers the period 2021-2030. Fonterra, New Zealand’s largest dairy company, has committed to no-net increase of its scope 3 farm-related emissions between 2015 – 2030. It requires farmers to have a comprehensive Farm Environment Plan by 2025 (53% coverage in 2021) and is offering farmers a difference payment if they meet on-farm sustainability and milk-quality requirements.

### Transition - Reaching Net-Zero

He Waka Eke Noa is the Primary Sector Climate Action Partnership, designed to support farmers and growers to develop a framework to reduce agricultural gas emissions in line with New Zealand’s targets and build the agriculture sector’s resilience to climate change. The partnership is between the government, native people, and 13 primary sector bodies, including Dairy NZ. The framework being developed will include incentivizing farmers and growers to take action through an appropriate pricing mechanism by 2025, in line with legislation. Opportunities for reducing emissions include:

- Improving animal diets;
- Improving feed conversion;
- Improving feed production;
- (Improved) manure management, and
- Green energy/biofuels.
Initiatives

In New Zealand we finance ~1,650 dairy clients and have a rural dairy market share of about 20%. We also serve the country’s largest dairy processor through our Wholesale business. We will continue to play a role in helping to reduce emissions from the NZ dairy sector, by creating the right environment for our clients to carve out their own unique net-zero pathways, and by aligning our policies and products to those pathways.

Help Clients Transition – Products & Services, Innovation, and Knowledge

- We are about to launch a Carbon Farming Loan that will allow clients with mixed operations to finance the conversion of marginal land into permanent forestry to generate carbon credits.
- Providing targeted Sustainability Linked Loans to eligible farmers.
- Regional sustainability and climate training sessions for staff and clients, including carbon and GHG workshops and Integrated Farm Plan workshops.

Change the System – Engagement Strategy

- We will leverage our political clout and strategic networks to advocate for change (e.g. with Fonterra) on the back of the frontrunner position that New Zealand itself intends to play.
- Our active Client Council network serves as a recurring forum for discussing sustainability-related topics.

Optimize the Portfolio – Policies & Conditions

- We use industry calculators to provide insights into on-farm emissions and identify the most appropriate abatement measures. We also assess the broader sustainability performance of our clients through our sustainability assessment tool (Rural Client Photo).
- Changes in our portfolio exposure (growth/shrinkage) in the coming years will have a corresponding impact on our financed emissions in the sector without necessarily being related to a real economy change in GHG emissions and removals. Therefore, we will continue to work with our clients to ensure that our portfolio’s GHG intensity is in line with the above-mentioned decarbonization pathways.
This graph shows the estimated GHG emissions intensity reduction needed for the production of soy in Brazil. Due to data constraints, we are currently not able to calculate the carbon intensity of our portfolio for soy in Brazil. Therefore, our preliminary 2030 emission intensity reduction target is equal to the regional average. We will set a definitive target once we are able to more accurately plot our portfolio emissions intensity. The orange dot and connected blue line is based on the SBTi FLAG (non-LUC) reduction target, which corresponds to the sector/region specific, on-farm emissions (including feed) and is closest to the accounting scope of our financed emissions estimates. The light blue, dotted line in the graph is based on the science-based reduction pathway including on-farm emissions, LUC emissions and removals.

**Market Development**

Soybeans are the most important crop in Brazil in terms of area. Today, some 40 million hectares are used for soybean production, out of a total of the 75 million hectares used for all crop production. Since 2018, Brazil has been the world’s leading producer and exporter of soybeans, and the soybean complex (the combination of beans, oil, and meal) is the largest generator of export earnings within Brazil’s agriculture sector. 90% of Brazilian soy is cultivated under the no-tillage system and 10% under the no-tillage+direct drilling (SPD) system, meaning 100% of Brazilian soy are cultivated using a low-carbon emission agriculture technique.

Brazilian soy production had a net emission of 8.2Mt CO2e in 2020, representing 1.5% of total Brazilian agriculture emissions. Brazil has a Nationally Determined Contribution target to reduce GHG emissions by 50% by 2030 compared to 2005 levels. Land use change represents about 46% of total national gross emissions (excluding removals but including land-use change and burning forest residues emissions) or 65% of total net emissions. Global private retailers and food brands are becoming aware of the linkage that soybean sourcing may/does have with deforestation and land-use change, and are moving ahead to make their own commitments and targets.

**Transition - Reaching Net-Zero**

Opportunities for lowering Brazil’s Grains & Oilseeds (G&O), including soy, GHG footprint (abatement measures) can be found in improving farm management practices for the application of inputs (limestone and fertilizers) and better management of crop residues. G&O can also play an important role in reducing land-use change through sector-wide no-deforestation agreements, although those actions are only indirectly linked with the land-use occupation dynamics. Viable measures include:

- Avoiding deforestation: global private retailers and food brands are making their own commitments and targets;
- Cultivation techniques: no tillage and no-tillage+direct drilling systems;
- Low Carbon Emissions in Agriculture Plan (ABC+), and;
- Integrated systems: livestock-crop, crop-forestry, and livestock-crop-forestry.
Rabobank’s Stance on Deforestation in Brazil

Why does Rabobank choose to finance farmers in Brazil?

Brazil is an important market for Rabobank given its mission to help feed the world. Over the past years, Brazil has become one of the top agricultural nations in the world, employing over 18 million people, producing food for roughly 1 billion people worldwide and being the leading exporter of soy, coffee and sugar. Rabobank focuses on leading producers in the country. They choose to work with Rabobank even though our sustainability policies and due diligence processes are stricter and more rigorous than those required by local law. They also apply best-in-class sustainability practices, such as crop rotation, no-tillage production systems and integrated crop-livestock systems. Through these producers, we are helping to build a sustainable agricultural system and stronger rural communities in Brazil. At the same time, Rabobank is not blind to the risk of deforestation. Rabobank has a zero-tolerance policy on illegal deforestation, which accounts for approximately 98% of all deforestation in Brazil. We have standards and procedures in place to minimize the risks of accidentally becoming involved in financing deforestation. And we have solutions in place to support clients who want to convert idle or unused land into productive land to avoid new deforestation, such as the AGRI3 Fund.

Illegal deforestation

Rabobank has a zero-tolerance policy on illegal deforestation (conversion of private land that does not comply with the Brazilian Forest Code and/or without the necessary environmental analyses and/or permits) in Brazil. This means that we:

- do not onboard or finance clients who are known to have illegally deforested land;
- do not finance the acquisition of land that was illegally deforested, or accept illegally deforested land as collateral, if deforestation took place after the 1st of January 2005 (January 2005 is the start of Rabobank’s rural operations in Brazil. Rabobank’s cut-off date is 3 years earlier than the legal cut-off date of Brazilian environmental law, which is the 22nd of July 2008).

How does Rabobank know if land has been illegally deforested?

Prior to financing the acquisition of land, or taking it as collateral, Rabobank checks the land use conversion history using satellite technology provided by a Brazilian digital platform and data services provider. Rabobank also uses a satellite-based solution which sends out daily alerts if a fire, or potential land use change, is detected on land in Rabobank’s portfolio. These alerts are actively monitored by Rabobank. If our subsequent investigation confirms that the land has been illegally deforested, we block all existing facilities and take the necessary steps to terminate the relationship and remove the client from our portfolio. Rabobank further uses publicly available official data from IBAMA, ICMbio (among others) to monitor land uses conversion.

Legal deforestation

Legal deforestation is the conversion of private land that complies with the requirements of the Brazilian Forest Code and for which the necessary permits and licenses have been obtained from the relevant Environmental Authority. The Brazilian Forest Code requires that a certain percentage of private land must be preserved as native vegetation (Legal Reserve). In the Amazon biome – which is one of the six biomes in Brazil - this percentage is 80%. Based on these percentages, some producers have what is called a “surplus” of native vegetation on their lands. For example, a farmer owns properties with a total native vegetation area of 32% in the state of Minas Gerais, located in the Cerrado biome. In this biome, legislation requires that 20% of the land is preserved as native vegetation. This means that the farmer could ask the relevant Environmental Authority for authorization to convert this surplus (12%) into agricultural land. Rabobank does not provide financing for such legal deforestation in any biome. In the Amazon biome, Rabobank also does not accept land as collateral that has been deforested after the 1st of January 2018, even if done legally.

What are some of the challenges that Rabobank faces and how does the bank try to mitigate them?

Rabobank’s clients may own or lease land of which a portion – based on the Legal Reserve requirements set by the Forest Code – could still be legally converted, if they were to obtain the required permits. We actively encourage clients with valid legal deforestation rights not to exercise such rights, including by developing carbon credits, or payment for eco-system services. Still, clients could decide to use funds from another bank, or their own free cash flow, to finance legal deforestation, or be involved in a partnership with another farmer, who is not a Rabobank client and who deforestation legally.

Initiatives

Our Rural clients in Brazil who are active in G&O today consist of approximately 1,000 farmers with 8.7 million hectares in soy and roughly 1,000 farmers with 4.4 million hectares in corn. There are also approximately 180 farmers with 1 million hectares in cotton. Clients often work with five to seven different banks. Due to historic risk appetite, we provide an average of 30% of our individual client’s total financing. We are well-recognized in the Brazilian market as a frontrunner on sustainability and have successfully launched products such as AGRI3 and Sustainability Linked Loans. Not only do we have the ability to connect clients along the value chain, we have the ambition to engage with and support our clients in seeking the continual improvement of economically and environmentally sustainable operations. We support our clients on this ever-changing journey. We conduct a hotspot/baseline analysis of sustainability metrics, set a baseline, measure progress, and use these insights to make strategic decisions.
Help Clients Transition – Products & Services, Innovation, and Knowledge

- Training and awareness creation through our AgroLideres program.
- Sustainability Linked Loans: the non-financial KPIs will be added to loan documentation. When clients meet these KPIs they will receive reduced interest rates or better tenor.
- Blended Finance and AGRIF3 Fund: (impact) investors co-finance or de-risk transactions to enable sustainable development to become financially feasible.
- “Trees for Farmers” is a project in which farmers plant trees on unprofitable, idle land to generate carbon credits that are sold through the Rabo Carbon Bank (currently being piloted with three farmers).
- Use of AgroTools, a leading digital platform with real-time data on land use (or land-use change).
- Provision of advisory services through our Rural Advisory Team and local technical advisers.

Optimize the Portfolio – Policies & Conditions

- We are rolling out a carbon calculator to provide insights into on-farm emissions and identify the most appropriate abatement measures. In addition, we assess the broader sustainability performance of our clients through our sustainability assessment tool (Rural Client Photo).
- Changes in our portfolio exposure (growth/shrinkage) in the coming years will have a corresponding impact on our financed emissions in the sector without necessarily being related to a real economy change in GHG emissions and removals. Therefore, we will continue to work with our clients to ensure that our portfolio’s GHG intensity is in line with the above-mentioned decarbonization pathways. However, our strategic focus and strict sustainability criteria give our portfolio a significantly better climate performance than the regional average reflected in the decarbonization pathway above. We are working to establish a more accurate picture of the GHG emissions profile of our portfolio in the region to be able to arrive at a more realistic target as soon as possible.
Tractors

Market development

In the agricultural equipment industry, a main driver of emissions is the use of tractors. Currently, the vast majority of tractors operating globally are driven by diesel-powered internal combustion engines. This propulsion method is still popular due to lower costs and legacy infrastructure. Due to the characteristics of agricultural machinery and the related infrastructure, the agricultural equipment industry states that internal combustion engines will remain a viable and suitable solution for the coming decade to deliver on the decarbonization targets. In addition, there is awareness that in the longer term, technological advances are needed that allow for deep decarbonization of agricultural equipment assets. Thus, in the mid-term promotion, production, and use of alternative sustainable fuels is required while other technologies (e.g., electrification) come to maturity and become commercially viable in the long-term.

Transition - Reaching Net-Zero

Globally, DLL is an important link between agricultural equipment manufacturers, dealers, distributors and resellers, and their end-users, through the provision of different financing programs and value adding services. We envisage that in order to reach the decarbonization targets, tractor assets need to become more efficient. This means that the energy needs are reduced for the same level of agricultural output.

While DLL is targeting to achieve decarbonization aspirations, such is dependent on a number of critical assumptions, including, without limitation, technological advancements by DLL’s vendor partners to reduce GHG emissions in its products and supply chain as well as (end)customer acceptance of practices that need to be followed to optimize carbon reduction. The current state of the tractor market makes it challenging to realize an ambitious reduction in 2030, given that the first electric tractors are not anticipated to be introduced in most major markets in upcoming years. Nevertheless, DLL is engaging with

1. key vendors to follow developments in technology and production methods and exert influence where possible, and
2. new market entries offering emerging technologies or specific niches.

DLL will make this a top priority in coming years, and therewith hopes to achieve a 5% emissions reduction by 2030 relative to 2020, taking into account the assumptions noted above.

DLL’s strategy is a combination of the following three options with different degrees of leverage and implementation timelines:

- **Improved efficiency (now-2030):** this can be achieved through machine efficiency, operational efficiency and/or process efficiency.
- **Cleaner diesel alternatives (now-2030):** can be acquired by mixing mineral diesel with biodiesel or other cleaner energy carriers, provided that these can be produced in a responsible manner.
- **New technologies (2030 onwards):** DLL will enable technological adoption by collaborating with its key vendors and providing the needed financing.

We expect the near-term opportunities for decarbonization to come primarily from the increased efficiencies and adoption of (sustainable) biofuels.

The availability of biofuels or other alternative energy carriers varies per region. The current supply of sustainable biofuels is inadequate to meet demand for energy and simultaneously inflates the price. In addition, production of biofuels brings other sustainability developments and challenges in the feed-fuel complexity. Moreover, complexity is present in feeding the growing world population. The increased demand for agricultural products and consequently growth in the DLL tractor portfolio will result in increased absolute emissions if the emissions intensity does not decrease fast enough.

In the medium to longer run, the crucial contribution to the decarbonization in the agricultural industry is dependent on the availability of clean technologies. Certain new (and efficient clean) technologies are in a nascent phase, and some market leaders piloting proof-of-concept and prototype equipment and machinery. Since DLL provides vendor finance solutions, intensive engagement with vendors is needed to push for more innovation into more sustainable technologies.

Given these circumstances, the emissions intensity is expected to decrease slowly; with a target of 5% emissions reduction in 2030 relative to 2020.
Initiatives

DLL’s decarbonization efforts are currently focused on the following initiatives which it believes are appropriate first steps in this journey:

**Help clients transition – products & services, innovation, knowledge**
- Engage with thought leaders to keep abreast of market trends and innovations;
- Partner and engage with vendors to monitor and investigate new technologies;
- Use of EIB funds for Climate and Circular business in certain regions to replace older tractors with more efficient models; and investigate other potential incentives for equipment segments with lower emissions;
- Investigate infrastructure solutions (biogas digesters, hydrogen);
- Prioritize pilot opportunities with electric tractor vendors;
- Financing on-farm demonstration units through DLL’s Commercial Finance, and
- Explore the potential modification of risk appetites to enter into relationships with new market entries/start-ups allowing for collaborations offering emerging technologies or specific decarbonizing niches.

**Change the system – engagement strategy**
- Engage with key vendors to have strategic conversations on this topic, follow developments and develop joint strategies and initiatives;
- Discuss with co-operatives (and other similar construction) to enable farming communities to embrace more sustainable practices, and
- Promote circularity and renewable energy opportunities.

DLL will continue to explore further ways to support its vendors and its clients in transitioning their assets toward the Paris Agreement.
Residential Real Estate

**Market Development**

The energy we use in the residential real estate sector is a major source of GHG emissions. GHG emissions linked to homes come from two main sources. The first is natural gas, used to keep our houses warm, to heat water, and to cook. The second is electricity, which we primarily use for lighting homes and to power and charge appliances and gadgets. Increasingly, we also use electricity to heat and cool homes, and to charge electric vehicles.

The Dutch Climate Agreement has set a target of reducing GHG emissions for the built environment in the Netherlands by 3.4Mt CO2e by 2030. During this period, approximately 1.5 million homes will have to be made more sustainable and GHG emissions from existing homes will have to be reduced by 1Mt CO2e.

The current government in the Netherlands has declared its intention to increase the overall GHG emissions reduction target in the Dutch Climate Agreement from 49% to a minimum of 55%, while aiming for 60%. In May 2022, the Dutch government disclosed specific goals for the residential real estate sector: to improve the energy efficiency of 750,000 houses by 2030 through municipal government programs, and to improve another 750,000 houses through subsidies to individual homeowners.

**Transition - Reaching Net-Zero**

We are the largest mortgage provider in the Netherlands. We finance more than 1 million homes in the Netherlands with our subsidiary mortgage providers, Obvion and Vista. We feel the responsibility and ambition to play a role in the transition to a sustainable living environment.

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This graph shows the relationship between the average carbon intensity (expressed in carbon emissions per m²) of our residential real estate portfolio and the decarbonization pathway for the Dutch residential real estate sector (according to the CRREM methodology). The pathway describes the required rate of reduction in carbon intensity over time for the Dutch residential real estate sector to comply with a <1.5°C warming scenario. Using our current calculations, our portfolio average emissions intensity is lower than the pathway and can be considered compatible with the 1.5°C scenario. To achieve our 2030 interim target and remain aligned, the emissions intensity of our portfolio will have to decrease by at least a further 30% between now and 2030.
Initiatives

Over the last four years we have developed a homeowner sustainability journey based on five building blocks that correspond with our customers’ needs:

1. Inform – as a homeowner, what are the most important sustainable living changes I need to know about?
2. Roadmap – what measures should I take to make my home more energy efficient?
3. Realize – where can I find a high-quality contractor to help me make these changes?
4. Pay – how can I pay for these changes?
5. Live – what lifestyle changes can I make to live more comfortably and sustainably?

By training our mortgage advisers and developing supporting products and services, we have integrated these building blocks into our regular mortgage journey. Through this approach, in 2021, 25% of our new mortgage contracts included an average of EUR 14,500 in financing for energy-saving measures. By 2023, we expect this percentage to include more than 35% of mortgage contracts. We also expect that our continuing efforts to develop hassle-free propositions will raise the percentage of mortgages that also include financed energy-saving measures to 60% by 2030.

Some of the main tools and initiatives we deploy to achieve these changes include:

- The Rabo House Scan: an online tool that helps homeowners learn about the measures they can take to improve the energy efficiency of their homes. One of the tool’s unique features is that it directly links customers to a list of selected contractors so that they take their new insights and immediately turn them into concrete actions.
- Carbon Insights: customers can get insights into their energy usage through our banking app. In the future, the app will also provide them tips on how to improve their energy efficiency.
- The Green Building Depot: a flexible financing solution for new mortgage customers interested in making their homes more sustainable in the near future.
- Sustainability Discount: new mortgage customers financing a home with an energy label of A++ or better receive a sustainability discount on their interest rate.
- The Green Mortgage: Rabo Green Bank provides discounts to mortgage customers that meet Netherlands Enterprise Agency (RVO) sustainability requirements.
Commercial Real Estate

This graph shows the relationship between the average carbon intensity (expressed in carbon emissions per m²) of our commercial real estate portfolio and the decarbonization pathway for the Dutch commercial real estate sector (according to the CRREM methodology).

The pathway describes the required rate of reduction in carbon intensity over time for the Dutch commercial real estate sector to comply with a <1.5°C warming scenario. Using our current calculations, our portfolio average is lower than the pathway and can be considered compatible with a 1.5°C pathway. To achieve our 2030 interim target and remain aligned with the pathway, the emissions intensity of our portfolio will have to decrease by at least a further 27% between now and 2030.

Market Development

The Dutch Climate Agreement has set a target of reducing emissions in the built environment by 3.4 Mt CO2e by 2030. 1.5 million existing homes have to be made more sustainable before 2030. An additional 1 Mt has to be cut in existing non-residential buildings. By 2050, the built environment has to be natural gas free and should emit 95% less carbon compared to 1990. The Dutch Commercial Real Estate (CRE) sector has a well-defined transition pathway with clear targets and metrics.

One of the hurdles here is collecting data. We foresee that data challenges remain, however the transition to new energy labels and a lack of insight into actual energy usage should not pose a serious barrier to short-term decarbonization efforts and rising energy prices are expected to further stimulate the demand for energy efficiency.

Transition - Reaching Net-Zero

Energy labels are a proxy for actual energy use, and thus carbon footprint, because they are a theoretically calculated metric. Data for actual energy use is not publicly available today. Therefore, the actual carbon footprint of our Commercial Real Estate (CRE) portfolio is a calculated proxy based on energy labels.

The strategy and approach in the CRE domain differs per segment. The carbon intensity of the SME and mid-cap segment portfolio is comparable to the average of the Dutch market. Our exposure to real estate (CRE and non-CRE) covers over 100 thousand assets. Therefore, the proposed client support tools are based on the idea of massification; in this segment we cannot afford to target client-by-client, or asset by asset. We aim for an achievable pace and ambition when it comes to our sustainability underwriting criteria (UWC) as we prefer supporting clients to make the switch rather than excluding them from financing. It is a delicate balance between setting the standards high enough to keep a steady pace towards Paris alignment, while not alienating and excluding our clients. As we aim to have a more tailor-made CRE credit policy, we are in the process of differentiating the UWC for different CRE client segments: the more professional the client, the higher the sustainability criteria in the UWC. Sustainability UWC for real estate assets financed in the other sectors are in the making.

In the Wholesale segment, we are working on new sustainability standards for our clients and the larger market. The real estate investment market in the Netherlands heavily relies on bank financing, meaning that we could have a significant impact on their sustainability decisions. Our market share means that we can be a strategic knowledge partner. There is a diversified maturity calendar with approximately 20% of the exposure expiring annually creating ongoing opportunities to implement our sustainability standards in our clients’ business. Moreover, CRE aims to impact the actual energy use of their financed buildings (Scope 3 emissions) by encouraging clients and relevant stakeholders to lower their carbon footprint.
Decarbonization Opportunities
- Focus on transformation, project development, and more ambitious funds for upgrading current assets;
- Put sustainability on company level in place by adding more criteria, and
- Invest in innovative climate technology ideas to support the long-term efficiency aim of transitioning the sector in line with the global climate objective.

Initiatives
The bank’s greatest influence lies in its facilitating role for the built environment. This role can generally be categorized as financing, advising and cooperation. Key levers to achieve higher sustainability levels in our CRE portfolio are applying minimal thresholds for energy labels or actual energy use in the credit policy for new to be financed assets and assets that require refinancing.

Help Clients Transition – Products & Services, Innovation, and Knowledge
- Financing transition abatement measures on asset or client level, with - under certain conditions - lower interest rates or other favorable conditions.
- Setting up client support and awareness projects/initiatives, like www.raboduurzaamvastgoed.nl, partnering with enabling companies, blogs, and presentations, also in cooperation with other Dutch banks (i.e. ‘Alle seinen op groen’).
- The existing CRE policy already provides thresholds for energy labels.
- Application of Rabo Green Loan, for eligible transactions.
- Propositions such as Sun on the Roof (Zon-op-dak).

Change the System – Engagement Strategy
- Beyond servicing clients, we have an advocacy role and are considered a thought leader, active player, and sounding board for the Dutch Banking Association, the government, IVBN, NVM, VNO-NCW, Neprom, NRP, ULI, DGBC, Platform31, and so on. We actively advise and provide our opinion, we sign and support initiatives (e.g. ‘Alle seinen op groen’), we provide input for government climate plans, jointly set up the sustainability section for the real estate valuation process, and so on.

Optimize the Portfolio – Policies & Conditions
- For clients: the sustainability matrix provides a customer view on sustainability performance and the insights to develop financial products and concepts that stimulate sustainability performance improvement.
- For real estate assets: Energy labelling pathways are in place for 2022-2025 to steer on sustainability and (future) legislation.
- Differentiate underwriting criteria for various CRE client segments: the more professional the client, the higher the sustainability criteria in the UWC.
Transport

This graph shows the estimated rate of the decrease in the GHG emission intensity for our transport portfolio required to comply with a <1.5°C warming scenario. This graph combines the GHG emissions intensities for land and sea transport. Currently we are not able to plot the emissions intensity of our combined transport portfolio so we assume that our portfolio emissions intensity is equal to the market average. Based on this assumption, to achieve our 2030 interim target and remain aligned with the pathway, the emissions intensity of our portfolio will have to decrease by a further 37% between now and 2030.

Market Development

Globally, the transport sector has the greatest reliance on fossil fuels of all economic sectors. In 2019, transport was responsible for 24% of direct CO2 emissions from fuel combustion, or roughly 8.5 Gt CO2. Road vehicles account for nearly three quarters of transport CO2 emissions, while aviation and shipping account for the remaining 25%.

In 2019, the transport sector in the Netherlands was responsible for 35.1 Mt of CO2 emissions or 19% of total CO2 emissions. Based on the IPCC guidelines, 84% of the Dutch transport sector emissions can be attributed to road transport, followed by 3% from inland water shipping, and the remaining 13% from other transport. International aviation and international maritime transport are not included in these figures.

According to the Dutch Climate Agreement, the 2050 vision for the transport sector is a zero-emission mobility system that is accessible, affordable, and safe for all. This means a transition to sustainable energy carriers, including the use of electricity, hydrogen, and biofuels; electric vehicles and sustainable mobility, including shared-use platforms and mobility-as-a-service, and zero-emission logistics. The Netherlands also commits to zero-emissions by 2050 in heavy freight, shipping, and air transport. The Dutch Climate Agreement prescribes that a 30% reduction of CO2 emissions is needed for road freight, hinterland, and continental transport by 2030. For the international sub-sectors shipping and aviation, targets are set by international sector bodies (IMO and ICAO, respectively).

Transition - Reaching Net-Zero

With a market share of ~5% in road transport and strong competition from other financiers, the sphere of influence is considered limited. Additionally, technological impediments and limited availability of infrastructure and materials are slowing down the transition. Despite these constraints, we will continue to support the sector’s transition, exerting our influence where we can and supporting our clients to move towards a low-carbon future. In shipping, we have a small market share in short sea shipping, but ~50% market share in inland shipping. The nature of shipping contracts with ship owners is long-term, following the long lifetimes of shipping assets, which makes it challenging to competitively finance ship renewals. Furthermore, a few off-takers of shipping services have high bargaining power which we cannot influence.
In road transport, our strategy is to shift from "here to greener" for smaller assets first (personal cars and vans) and to start financing electric trucks. We can offer clients diverse financing products for a wide variety of solutions to stimulate e-mobility, such as leasing and charging and generation infrastructure, and can therefore stand out from competitors by providing an integrated solution. Advocacy opportunities are considered to be limited. In shipping, we can incentivize clients through interest rate discounts, and we help shape the transition with our advocacy role and as a stakeholder in policy development and key interest groups.

Initiatives

Help Clients Transition – Products & Services, Innovation, and Knowledge
- Help shipping clients (particularly inland/short sea) go from here to greener;
- Help transport & logistics clients transition their fleets from here to greener, for example by leasing electric vehicle fleets and swapping from ICE vehicles to EVs;
- Develop financial solutions for zero-emission LCV fleets;
- Develop financial solutions for low-carbon road logistics and public transport fleets, and
- Develop charging infrastructure solutions for all asset classes.

Change the System – Engagement Strategy
- We are one of the largest players in the inland shipping market and have a strong advocacy role due to our size and expertise.

Optimize the Portfolio – Policies & Conditions
- Further grow our activities in low-carbon transport and mobility in the wholesale segment;
- Provide incentives for more sustainable business practices through Sustainability Linked Loans.

Road to Paris Client Case

Sustainable Delivery Services by TSN Groen

The Challenge
In 2019, the transport sector in the Netherlands was responsible for 40.5 Mt of CO2 emissions or 23% of total emissions. According to the Dutch Central Bureau of Statistics, 23% of transport emissions can be attributed to land-based transport. In its Climate Agreement, the Netherlands aims for a zero-emissions transport sector towards 2050. Adding to the challenge of achieving that aim, is the increase of online purchases and the accompanying logistics.

The Solution
TSN Groen’s main business is delivering and installing large consumer products. The company works for retail and web shops and deliver mainly large consumer goods, such as beds, sofas, garden furniture and white goods.

Sustainability is the common thread in TSN's development. Their aim is to offer their services in a sustainable way. Among others, the company has built a fleet of sixty electric cars, which are charged with the electricity yielded by a 3,100 panel solar park on the roof of its distribution center. Today the vast majority of TSN’s transport is sustainable and a large proportion of its delivery is emission-free.

Rabobank assisted TSN in its sustainability efforts. For the purchase of the electric vehicles, Rabobank provided an e-mobility financing concept. TSN Groen demonstrates that investing in sustainability is also profitable and future-proof.
This graph shows the relationship between the average carbon intensity (expressed in carbon emissions per MWh) of our Dutch and International energy portfolio and the IEA Net-Zero decarbonization pathway for the energy sector. The pathway describes the required rate of reduction in carbon intensity over time for the power generation sector to comply with a <1.5°C warming scenario. Using our current calculations, our portfolio average is lower than the pathway and can be considered aligned. To achieve our 2030 interim target, the emissions intensity of our Dutch portfolio will need to decrease to 0.11 kgCO2/kWh and for our international portfolio the emissions intensity will need to remain below 0.14 kgCO2/kWh between now and 2030.

**Market Development**

The energy sector is at the core of the transition to a low-carbon economy, as it provides power for the rest of the economy. It consists of companies that are active in the field of producing or supplying energy, which can range from extraction and refining to power generation and renewable energy production and distribution. Sectors such as transport and industry still heavily rely on fossil fuels as their main energy source.

Globally, power generation represents roughly 40% of energy-related emissions. In the Netherlands, the energy sector was responsible for 41.5 Mt of CO2e, or roughly 23% of total emissions in 2019. Approximately 26% of power generation in the Netherlands in 2020 was from renewable sources.

Globally, the share of renewable energy in the total energy supply needs to reach 70% by 2030 to be able to achieve net-zero by 2050. The main drivers for more renewable energy are wind and solar. Roughly 30% of global power generation is now from renewable sources. The E.U.’s Fit for 55 strategy states that by 2030, the share of renewables should increase in energy from 11% to 40%, and in electricity, from 26% to 70%. The Dutch government envisions a carbon-free electricity system by 2050. This also involves a total phase-out of fossil fuels by 2050. Shorter term goals are less certain due to lower supply of natural gas from Russia. This means that coal-fired generation is now (temporarily) allowed to fill the gap while renewable capacity is increased.

**Benchmark Methodology**

The IEA NZE benchmarks only provide a direction of reduction in terms of the relative change from 2020 (in percentages). In addition, the benchmarks are only available on a global level. Our Dutch and International portfolios (in emissions intensity) perform under this global sector benchmark. For the Dutch energy portfolio, we have derived a convergence pathway from our current portfolio to the global benchmark portfolio leading to net-zero in 2050. Our reduction target in Energy NL comes from this convergence pathway. The emissions intensity of our Energy International/Power Generation portfolio is currently compatible with a 1.5°C pathway.
Transition - Reaching Net-Zero

The main drivers of decarbonization are expected to be a combination of:

- improved efficiency,
- electrification (and thus increasing the share of renewable energy in total energy): from solar, wind (both sea and land), and cleaner (sustainable) fuels: heating from green gas, rest heat and earth heat, and sustainable fuels for activities that are difficult to electrify.

Our Energy Transition strategy focuses on clients for whom the transition to a low-carbon future depends on the shift from fossil fuel to renewable energy sources. Both nationally and internationally, our energy portfolio is mostly focused on power generation. In 2020, our EUR 3.4 billion sustainable power generation portfolio delivered 5.6 Mt CO2e in avoided GHG emissions.

One major challenge is the availability of raw materials related to electrification of the energy system with a low supply of sustainable fuels and green gas. Carbon capture and storage provides further decarbonization potential, especially where fossil fuels are still being used for power generation. Another challenge specifically relevant for power generation is (grid) infrastructure. The transition towards more renewable power sources is accompanied by the decentralization of the power system. Another challenge is that supply from renewable sources is uncertain. Grid infrastructure development needs to facilitate these changes through, for instance, “smart” grids, bidirectional charging, and temporary storage at different levels of scale. Hydrogen can be an important fuel for the heavy industry, but infrastructure (electrolyzers and distribution) needs to be developed. In the longer term, nuclear energy might become relevant in the power mix.

Initiatives

Through our current and potential initiatives, we aim to further grow our renewable energy portfolio. Our current programs include financing solutions for energy cooperatives and scaling our energy asset loan products. Additionally, the Banking for Energy initiatives will further accelerate our transition to more sustainable financing in the energy sector, which is described below.

In the current regulatory environment surrounding renewable energy we are well-positioned to use our advocacy role by liaising with key industry bodies and (local) governments. In addition, our local networks offer a competitive advantage when picking up on local initiatives.

Therefore, we currently have two strategic programs running: Banking4Energy and B4E accelerated 2.0. These programs aim to support our Dutch and international clients in their energy transition.

Help Clients Transition – Products & Services, Innovation, and Knowledge

- Our main goal is to build on our position in renewable energy;
- We will further accelerate to support clients’ transition in the energy transition value chain;
- Propositions such as Sun on the Roof (Zon-op-dak);
- REAL (Energy as a Service);
- Energy cooperatives;
- We are involved in the Green Oxygen, Hydrogen and Waste Heat (GROHW) initiative; a pilot in the Dutch city of Deventer that aims to develop a scalable system for the production, transport, and use of green hydrogen;
- Our Rabo Sustainable Innovation Award stimulate novel concepts and innovative business models in the energy transition, and
- We organize continuous Circular Economy Challenges and operates a Circular Economy Finance Desk to support clients with everything from linear to circular business models.

Our avoided emissions are calculated using the International Finance Institution’s Combined Margin Emission Factor, which gives a weighted average of the operating margin emission factor and built margin emission factor. The built margin emission factor is based on a model and uses the power plants commissioned from the start of the forecast period as input and represents the average annual emission intensity of new electricity generation projected over the next eight years.
Our Road to Paris - Metrics & Targets

Change the System – Engagement Strategy
- Promote circularity and renewable energy;
- Engage with groups, e.g. the energy cooperatives;
- Through our involvement with FME (industry organization) in Project 6-25 we aim to reduce 6 megaton CO2e in 2025 through the introduction of new technologies and startups and scaleups, and
- We are involved in the Dutch Ministry of Economic Affairs’ program Circular Manufacturing Industry (Uitvoeringsprogramma Circulaire Maakindustrie) to increase circularity.

Optimize the Portfolio – Policies & Conditions
- Further increase our financing to renewable power generation. By 2030 we aim to add an additional EUR 10 billion in financing in this sector;
- Manage our fossil fuels portfolio in line with the IEA Net-Zero Emissions by 2050 (NZE) scenario: from 2023, we will gradually reduce the combined volume of traded oil and gas we finance. By 2030 this combined volume will be 20% lower than in 2022. Within this reduced combined volume, the volume of traded gas will grow by 20% (vs 2022) in recognition of the role that gas can play as a transition fuel towards 2030. This means that we will reduce the volume of traded oil we finance by more than the NZE scenario dictates;
- By the end of 2024, or earlier if possible, we will communicate physical volume reduction targets for our traded oil and gas portfolio;
- Further grow in the wholesale segment in the energy value chain;
- Provide incentives for more sustainable business practices through Sustainability Linked Loans, and
- Continue to exclude the financing of coal-related activities and new oil exploration and extraction activities.

Road to Paris Client Case
GIGA Battery to Speed Up the Energy Transition
The Challenge
Current capacity to store surplus renewable energy is limited. As a consequence, when there is insufficient solar and wind production to meet electricity demand, gas and coal-fired power plants are used to bridge the gap.

The Solution
GIGA storage has developed the GIGA Buffalo to help resolve this. The GIGA Buffalo is the Netherlands’ biggest battery. It can store up to 30,000 megawatt-hours of electricity, which amounts to approximately the yearly usage of 9,000 households. GIGA Batteries can help reduce gas consumption and provide substantial CO2 reductions. Compared to a gas power plant, the GIGA Buffalo project alone saves 8,532 tons of CO2 emissions per year.

Rabobank played an important financing role to GIGA storage in the GIGA Buffalo project, which is among the first of these projects to be financed in Europe. We already finance even larger battery projects in the US and expect many additional battery project financing in future, in the Netherlands, Europe and the US. Financing the Energy Transition is a strategic priority for Rabobank and our global energy portfolio is focused on power generation. For some 25 years, Rabobank has been a leader in financing wind and solar energy. In 2020 our power generation portfolio produced 5.6 Mt in avoided emissions compared to 0.9 Mt in emissions.
Climate Risk Management
Climate Risk Management

Introduction
In this section we describe our progress in identifying and assessing climate risks and integrating them into our overall risk management framework.

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 can also create exposure to transition risks, such as stranded assets. Adjacent to climate risks are environmental risks, such as water scarcity, which are also in scope of climate risk management. These risks, and their financial implications, will inevitably impact both our clients and our bank. Solid risk management is also a pivotal part of sustainability. Through dialogue, pricing, and acceptance and underwriting criteria, it can incentivize our clients to bring their business practices in line with net-zero pathways.

Sustainability in the Risk Strategy Framework
The diagram on this page illustrates how climate risk is incorporated into our risk strategy framework. For climate risk and other sustainability topics, our vision & ambition, together with external commitments and regulatory requirements, are the main drivers of what constitutes our playing field. These drivers impact our sustainability policy framework and how ESG is incorporated in the risk and compliance framework which we call “our essential foundations.” Both our playing field and the essential foundations impact the strategy. A sector vision and strategy is driving the portfolio strategy including targets, risk appetite and product offering. Working with this risk strategy framework helps us to focus our efforts and is expected to accelerate our action on embedding climate risk into our risk management.
Risk Taxonomy

At Rabobank, the risks related to our strategy and business model are classified into six material risk types: credit risk, market risk, liquidity risk, interest rate risk in the banking book, business risk, and operational risks (which includes reputation risk). Next to that, we also need to deal with more overarching, or cross-cutting, strategic risks, such as Environmental Social Governance (ESG) risks. ESG risks refers to risk factors (e.g. drought) that act as a driver or amplifier of the existing material risk types. ESG risks impact the material risk types through so-called direct and indirect transmission channels. As an example: there is impact of climate-related risks on credit risk (e.g. payment capacity and collateral value), on market risk (through the value of securities possibly resulting in “stranded assets”) and on operational risk (through damage to physical assets from extreme weather or compliance with duty of care regulation for wealth management clients investing in securities impacted by climate-related and ESG Risks). See the diagram.

Within the risk taxonomy, ESG risks are split between climate-related and environmental risks, Social risks and Governance risks.

Risk drivers

Cross-cutting Risk Factors

Climate-related & ESG factors as drivers or amplifiers of existing material risks

<table>
<thead>
<tr>
<th>Risk drivers</th>
<th>Transmission channels</th>
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<tbody>
<tr>
<td>Climate related</td>
<td>Direct</td>
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<tr>
<td>Environmental</td>
<td>Indirect</td>
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<tr>
<td>Social</td>
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<td>Governance</td>
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Rabobank material risks

Non-financial

Operational Risk (including Reputational Risk)

Financial

Credit Risk

Market Risk

Liquidity Risk

Interest Rate in the Banking Book Risk

Business Risk

Physical Risk: these risks can be climate-related or 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, rises in sea level, water stress, or biodiversity loss.

Transition Risk: the risk of any negative impact, stemming from current, or prospective impacts of the transition to an environmentally sustainable economy. In particular, we consider impact of policy change, legal action, technological development and shifts in demand towards more sustainable products.
Risk Assessment
We expect the largest impact of climate risk on the credit risk profile. Consequently, we have focused primarily on the impact that climate-related risks have on our clients’ credit risk in our climate risk management efforts. The impact on operational risk is also deemed material. For market risk, liquidity risk and interest rate risk in the banking book, the impact of ESG risks are assessed to be below the "material threshold."

To manage climate risk we are working to structurally embed these climate-related risks in the credit risk framework, which includes the business strategy, risk identification, stress testing and the determination of provisioning, capital, and consequently pricing. The sections below describe the current status of climate-related risk identification and scenario analysis and how we can progress to individual client risk assessment.

Credit Risk Identification Strategy
Our climate risk identification strategy starts with a broad scan for climate and environment-related risks. These are summarized in climate risk heatmaps which show the threat level (a combination of the likelihood and intensity) and the event impact on our clients for a combination of geographic location, sector and time horizon (from 2 to 30 years). This is combined with our credit exposure to the relevant sector and geographical region to identify concentrations of inherent risk in our portfolio. Inherent (or gross) risk refers to risks before taking into account actions by our clients to mitigate these risks. The outcome of the heatmap and concentration analysis is used to prioritize more detailed scenario analyses and provides input for, among others, climate-risk stress testing, sector strategies, and, in the near future, assessment of vulnerable sectors and client-level assessment. Scenario analyses as well as stress testing give an indication of the materiality of a climate risk event. As climate adaptations and/or mitigations are client-specific, we do not consider them in the heatmaps. As such, the risk described below in heatmaps for concentration analysis and scenario analysis, is the inherent or gross risk.

Heatmaps and Concentration Analysis
The starting point to understand the overall inherent climate-related and environmental (C&E hereafter) risk in our loan portfolio is our C&E risk heatmaps. Heatmapping allows us to screen our portfolio and combined with concentration analyses identify areas within the portfolio that will likely be exposed to specific physical and transition risks. With the knowledge obtained from the heatmaps and concentration analyses we can focus on further assessing, managing, and mitigating these risks, and providing guidance to the business strategy and planning.

The heatmap has, where possible, two elements:

1. the threat level of a climate-related event (such as the likelihood of a coastal flood happening with a specific intensity threshold or the likelihood of new regulations), and
2. the event impact or vulnerability of a sector upon an event within a country.

Some key concentrations of exposure with relevant gross risk for physical risk include our mortgage portfolio in the Netherlands for riverine flooding and drought in the form of foundation damage, and our agriculture portfolio for drought and water scarcity in the western United States. For transition risk, we identify pockets of risk for the next five years mainly in the Netherlands and New Zealand across emission-intense sectors. This is largely explained by the governments of these two countries being mostly in a phase in which ambitions and plans are to be formulated and turned into legislation.
Heat Map Risk Assessment
Climate-related and Environmental (C&E) Risks Heatmaps and Concentration Analysis

Threat level
Per event/geographic location/time horizon
With data driven classification the likelihood and severity to each risk event is determined

Event impact
Per event/geographic location/sector
For every sector the vulnerability to the risk event is specified

The heatmap is created by combining the threat level and event impact

Rabobank Exposure
By combining the heatmap with the exposure of the bank the concentration analysis can be carried out

Concentration Analysis
Describes the Rabobank risk profile to identify the most important C&E risks

Heatmap
Per event/geographic location/time horizon/sector
Gives a qualitative gross risk estimate of the C&E risks

Per risk event
- Physical risk event
  E.g. drought, flooding, wildfire
- Transition risk event
  E.g. policy change, consumer behavior, new technology

Based on external data
Validate with literature

Near term
Medium term
Long term

Medium
Low
High

Low
Medium
High

Our Road to Paris - Climate Risk Management
Physical Risk Events: Methodology

To date, we have developed heatmaps for the following physical risks: extreme heat, drought, wildfires, riverine flooding, coastal flooding, cyclones, heavy precipitation and water scarcity. The threat level in the heatmap represents the likelihood of a climate-related event above a specific severity threshold. Our analysis is forward-looking up to a 2050 time horizon. For the frequency and severity of an event, we base ourselves on scientifically sound datasets which are a result of a thorough vetting process, literature review, and recommendations from the regulator. For the vulnerability of a sector, we rely on expert-based scorecards to determine sector vulnerability, supported by literature and proxies for impact of weather conditions and natural resources availability, such as water-use intensity per sector.

Geographic Coverage of Heatmaps

By overlaying the heatmap with actual exposure data, we can identify concentrations of exposure with significant (gross) risk, which include our mortgage portfolio in the Netherlands for riverine flooding and our agriculture portfolio for drought and water scarcity in the western United States. Our subsequent scenario analyses for these concentrations are discussed below.

Transition Risk Events: Methodology

On the transition risk side, the heatmap focuses on impending policy change with technology risk and consumer and market sentiment to be incorporated in future versions. Policy change depends on inherently volatile factors, such as politics and societal behavior, which makes it difficult to predict. To account for this, we developed an approach using various metrics that show the likelihood of policy change. We formalized these metrics in a decision tree, resulting in an objective, transparent indicator for the likelihood of policy tightening. Combined with a proxy for the impact of policy change on a sector (e.g., emission-intensity), we can arrive at a gross risk of policy change. To better quantify how transition risk could impact our clients, we also consider a scenario in which a carbon tax is introduced for each client, based on their (estimated) emissions.

Scenario Analyses: Outcomes

Below are high level outcomes of three scenarios that we performed in response to the outcome of the heatmaps: flood risk for mortgages in the Netherlands, water scarcity risk for the grain and oilseed sector in California, and a description of a carbon tax scenario analysis to share our progress on quantifying transition risk. These are our first attempts at quantifying these risks and the underlying methodology will be refined going forward.

1. Flood Risk for Mortgages in the Netherlands

Analyses from the heatmaps show that the risk of flooding is high for the Netherlands. Since a large part of the Netherlands is flood prone, it is important that we investigate the impact of flooding on our mortgage portfolio, especially since almost 70% of the economic activity and population is based in areas prone to flooding. We would be affected when a flood impairs the ability of our clients to pay their mortgages. In this scenario analysis, we have calculated the impact of floods on the value of collateral for each outstanding mortgage. 17 local scenarios and 5 flood hazard maps are analyzed.

These scenarios and hazard maps have been chosen with help of Rijkswaterstaat, part of the Dutch Ministry of Infrastructure and Water Management. The focus of the scenarios lies on flooding from rivers, as the dikes in the Netherlands are in many cases too narrow. However in some of the flood hazard maps, a degree of coastal flooding is assumed to occur. We use the method developed by Deltares and the Dutch government to relate water depth during a flood to property damage.
Result
Despite the potentially devastating impact of a flood on people affected by it, the first-order effects of a flood are estimated to be of limited financial impact on our mortgage portfolio. This conclusion does not differ greatly across all five of the flood hazard maps used in the analysis. As expected, the risk of high damage due to flooding is concentrated in the middle and western part of the Netherlands. The estimated impact is especially sensitive to the assumption of the cost of reconstruction.

Limitations
1. Only the first order effect (collateral damage) is included. Secondary effects, such as loss of income, flood-related diseases, additional costs, damaged infrastructure and non-working (emergency) services, are out of scope for this analysis.
2. The outcome of this analysis is an average for the Netherlands as a whole, which evens out regional outliers. Depending on the location, the reduction of collateral value can be up to 10 times higher. For the different national scenarios, which are the most extreme, the collateral value is reduced by up to 3% for the whole portfolio.
3. The outcomes of our analyses are very sensitive to assumptions about rebuilding costs when a property is damaged beyond repair. A sensitivity analysis (validated by internal experts) with higher rebuilding costs yielded substantially higher collateral value reductions. Following the methodology proposed by DNB, our base case scenario reflects a cost of reconstruction of EUR 1300 per m2. A sensitivity analysis with higher rebuilding costs, validated by internal experts, yielded substantially higher collateral value reductions than the aforementioned EUR 1.300 per m2.

Going forward
To quantify flood risk for the mortgage portfolio in the Netherlands, going forward, we foresee several improvements in our methodology. Firstly, we will further improve our estimate of the average building costs and keep updating this, to reflect changing market conditions. Secondly, we will consider a more granular approach to building costs, to account for the differences between residential buildings. Thirdly, we will seek to incorporate the most significant second-order effects into our analysis, to consider the financial risk from floods to the fullest extent.

2. Water Scarcity Risk for the Grain and Oilseed sector in California
Climate change is expected to lead to longer and more frequent droughts and consequently the risk of water scarcity increases. Water scarcity is especially a threat to California as it is drying rapidly and has a depleting and increasingly restricted water supply. In this scenario analysis we focus on a case study for the Grain and Oilseed sector, to which we are heavily exposed in the United States (EUR 2 billion U.S.-wide, of which EUR 260 million in California).

In our climate and environmental-related risk heatmaps, we assess the gross risk of water scarcity in the Western United States to be medium to high for most agricultural sectors. For this reason we performed a scenario analysis, which is a first attempt to determine how water scarcity impacts the Californian grains and oilseeds sector’s crop yields, their income, and finally the probability that they default on their loans. We considered three scenarios:

1. a moderate single-year drought,
2. a multi-year drought, and
3. an extreme single-year drought.

Results
We find that single-year moderate droughts and moderate multi-year droughts have only minor impact on the default probability. Only an extreme drought, in combination with severe water scarcity, has a significant impact on the probability of default. There is also a significant difference between farmers who heavily depend on surface water and those who do not, as this water source will be under stress first, making them extra vulnerable to water scarcity in the short term. Water scarcity is expected to increase in the future, warranting a further development of this scenario analysis, focusing on the effects of chronic water scarcity (as opposed to a temporary drought) and the difference between the impact on crops and the impact on the value of farmland (used as collateral).

Limitations
Secondary financial effects, like the subsequent effect on feed costs in the livestock industries due to higher grain prices resulting from lower agricultural yields, are not considered in this analysis. We expect that water scarcity will also affect farmland (collateral values). However, we have not considered this in the first iteration of this analysis even though we recognize that the impact on credit worthiness may be large.

Going forward
Information about a client’s access to water, water rights and accurate location data of fields are critical to refine the quantification of the risk that water scarcity poses for Rabobank going forward. A next step will be to investigate the effect of chronic water scarcity to agricultural businesses, as we have currently assumed it to be an acute and sporadic event. We will also investigate the effect of urbanisation and population growth as water for consumption is prioritized above farming.
3. Carbon Pricing Scenario for the Netherlands, the U.S., and Australia

We performed a carbon pricing scenario analysis, to assess the risk a carbon price introduction would have on our corporate clients in the Netherlands, the U.S. and Australia. In this scenario analysis, we used the financial statement data of clients, as available at the end of year 2021. In terms of geographic scope, we considered clients in the Netherlands, the U.S. and Australia, as the target was to include at least 80% of our credit risk exposure and these countries are the largest for Rabobank, ranked by exposure. In this scenario, we calculate the short-term (3 year) and long-term (30 year) impacts of letting all firms pay a carbon price, which is based on their (estimated) CO2-equivalent GHG emissions. For the (small- and medium-sized) firms for which bottom-up data is not available, the GHG emissions on firm level are estimated by multiplying the emission intensity of their sector with the company’s value added. For the companies that have actual emissions data, we have used this data. These carbon emissions are then priced and added as additional costs for a firm, reducing its profitability. These updated financial figures yield updated probabilities of clients defaulting on their loans. For the short-term scenario, the increase in carbon price is between EUR 321 and EUR 439 per metric ton. For the long-term scenario, the initial price increase is gradual but climbs to USD 1,000 per metric ton CO2.

Results
This scenario generates a Probability of Default (PD)-multiplier for each client in each scenario. To get insights into our portfolio, these calculated PD-multiples are aggregated in groups: by country and by sector (NACE-two-digit codes, see also the NAICS & NACE Codes Overview). The results are as expected: short-term scenarios have the highest impact on the PD, as the long-term scenarios assume a decline in emission intensity over the next decades. A short-term imposition of a carbon price of between EUR 321 and EUR 439 per ton, increases the average probability of default of a sector, by between 1.27 and 1.73 times by 2024. There are large differences between sectors however.

Approaching the scenarios from a sector perspective, we see that the following sectors show high sensitivity to carbon costs, across countries and scenarios: Crop and animal production, hunting and related service activities; Manufacture of computer, electronic and optical products; Manufacture of electrical equipment; Electricity, gas, steam and air conditioning supply; Land transport and transport via pipelines.

Limitations
In this analysis, we have included only scope 1 and 2 GHG emissions (which consist of direct emissions from combustion and agriculture and emissions from purchased electricity). This means we omitted scope 3, which includes upstream emissions of purchased products and services and downstream emissions of the use of products and services. While being very relevant information, this would require much more elaborate assumptions about how costs will be passed along in the value chain (i.e. analysis on price elasticities in the value chain). The same holds for the assumption that the additional carbon price-related costs are fully absorbed by the client. Another limitation of the analysis is that we assume that each sector follows the same national decarbonization paths. Lastly, the vast majority of our clients do not report CO2 emissions. To allocate the emissions of a sector, to individual clients, we use the sectoral carbon intensities and spread CO2 emissions to each customer in a sector, based on their share of the added value in a sector.

Going forward
The next climate risk stress test will be conducted along sectoral lines, with a global decarbonization path for each sector. In addition, we will use risk weights (which incorporate the loss given default or LGD), instead of exposure weights to better reflect our potential losses. We will also consider the second-order effect of lower profits on retained earnings of clients, which reduce the loss-absorbing equity in later years. Lastly, we will include price elasticity in the model, so that a carbon price will penalize the sectors that have difficulty passing on the higher costs to their customers.

ESG Sensitive Sectors and Vulnerable Sectors
We are currently linking the outcome of the heatmaps to determine whether a specific sector is “ESG sensitive” or a “vulnerable sector”. Clients in vulnerable sectors are deemed to have a “significant increase in credit risk” (stage 2 under IFRS9) which impacts provisions.

Climate Risk Stress Testing
This year, we completed our first dedicated climate stress test, at the request of the ECB. The stress test was composed of three main parts:

1. A qualitative assessment of the climate risk stress testing framework.
2. A benchmark of financed GHG emissions and of our reliance, in terms of income, on sectors that are sensitive to transition risk.
3. Several (quantitative) stress tests for different scenarios.

For transition risk, a 3-year and a 30-year scenario were considered. The three-year test assumed a sudden change in policy, based on the disorderly transition scenario designed by the Network for Greening the Financial System (NGFS). The 30-year scenario was modelled for three NGFS scenarios: Orderly, Disorderly and Hot House. For physical risk we were asked to model a sudden drought and heat wave scenario and a flood risk scenario. Finally for operational risk and reputational risk we submitted a qualitative questionnaire.
NGFS
The scenarios used for our long term climate scenario analysis were based on scenarios published by the NGFS. These scenarios provide a range of possible outcomes in terms of global warming and incorporate a complex set of assumptions regarding social, macro-economic and political developments.

Three scenarios were considered:
- Orderly: The orderly scenario assume climate policies are introduced early and uniformly across geographies and sectors and become gradually more stringent. Both physical and transition risks are relatively subdued.
- Disorderly: The disorderly scenario explores higher transition risk due to policies being delayed or divergent across countries and sectors. As delayed action shrinks the available carbon budget left, carbon prices are typically higher for a given temperature outcome, to achieve a faster emissions reduction.
- Hot House World: The Hot House World scenario assumes that some climate policies are implemented in some jurisdictions, but global efforts are insufficient to halt significant global warming. Critical temperature thresholds are exceeded, leading to severe physical risks and irreversible impacts like sea-level rise.

The scenarios version used for our 2022 climate scenario analysis are as published in 2021. For more information of on the NGFS scenarios, please refer to the NGFS Scenarios Portal.

Internal Firm-wide Climate Scenario Analysis Is a Stepping Stone for Future Long-term Analyses
Building on the ECB Climate Stress Test, we performed a firm-wide climate scenario analysis internally on three climate scenarios from NGFS (version 2, 2021). During the ECB stress test, we identified a number of limitations, which we addressed in this scenario. We widened the scope to include all our climate material assets (393 billion EUR), we increased the granularity for agricultural sectors in line with our agriculture focus globally, we aligned the emissions pathways to the pathways presented and we aligned the balance sheet to our medium term budget projections.

In terms of portfolios covered, this analysis includes EUR 138 billion (as part of the EUR 393 billion above) of Wholesale, Rural and Retail NL climate material assets. We used the three pathways mentioned in the text box above, mainly reflecting transition risk. Physical risk, while emphasized in the Hot House Scenario story line, will be better reflected in Version 3 of the NGFS scenarios and therefore will be assessed in a future iteration. Transition risk was, among other channels, modelled by analyzing the impact of a potential carbon tax on our clients’ probability of default for the Orderly and Disorderly scenario. It was assumed, based on the storyline that no carbon tax will be implemented in a Hot House Scenario.

In addition to the climate stress test, we have performed more stress / scenario analysis on ESG risks. Examples are an analysis of foot-and-mouth disease for New Zealand, drought in Australia and Nitrogen for the Netherlands.

- Impact – Financed Emissions
  Initial projections until 2050 show that we are facing a specific challenge in reducing financed emissions, owing largely to focus on agriculture, which will have residual emissions. We also see a large dependency on the decarbonization success of our clients, where a hot house scenario would be particularly detrimental to achieving our own 2050 commitment.

- Risk - Transition Risk
  The first insights show some variability in impact of a carbon tax between sectors. For the Netherlands, sectors such as Fresh Produce and Power Generation are less impacted as their emission intensity reduction is relatively early compared to other sectors. Furthermore, sectors such as Dairy, Pork and Soy are shown to be more sensitive to a carbon tax over the horizon in both (orderly and disorderly) scenarios, as the potential to reduce emission intensity is lower. These sectors are therefore subject to more carbon taxes over the horizon of the scenario. Consequently the probability of default for clients in these sectors will go up. It should be noted that, in both scenarios large reductions of emissions are assumed, limiting the impact of a carbon tax over time.
Future Developments

Making projections for a time period of around 30 years ahead is challenging, but it is a necessity if we want to understand how our clients may be impacted on the journey to achieving the Paris goals. We expect the following developments towards further sharpen our insights in future iterations:

- Structural implementation of climate features and improving sector-based modelling in our stress testing modelling landscape.
- Sourcing emissions and associated projections from clients directly, to reduce uncertainties around emission reduction projections.
- Expansion of the sectors and regions in scope for Paris Alignment will allow us to use better estimates for the climate relevant assets that did not have a sector-specific pathway yet.
- Version 3 of the NGFS scenarios provide a better reflection of the impact of physical risks.
- The pending ECB’s report on good practices observed in the climate-related stress test will also provide a basis for further improvements to the methodologies outlined above.

Risk Appetite and Underwriting Criteria

The risk profile of the portfolio is steered through individual underwriting criteria. We are increasingly including ESG-related factors in our underwriting criteria. For commercial real estate, underwriting criteria have been set on minimum energy labels per asset class.

The risk appetite statement (RAS) articulates the aggregate level and types of risk that we are willing to accept, or avoid, in order to achieve our business objectives. We currently have RAS indicators on Average Energy labels on our mortgages portfolio, inflow on labels for Commercial Real Estate offices and on the client alignment of our Sustainability Policies. Furthermore, the RAS contains various sector limits. We are working on developing further metrics and targets, in line with TCFD recommendations, that will support our future portfolio-related decision-making on risk limits.

Individual Client Credit Risk Assessment

We want to systematically assess clients based on the climate risks they face going forward. We are making steady progress in this area. In individual credit applications, a specific sustainability analysis is made and clients are classified per sustainability category based on compliance with sustainability policies (front runner, average performer, laggard, non-compliant). Relevant C&E risks and related mitigants are often already assessed in individual applications. To reach a more systemic approach, we still face a number of challenges. Incorporating climate risk in the overall risk profile of each client is dependent on a number of inputs:

1. Accurate data regarding the climate-related event projections for the future (e.g. flood incidence in a particular area);
2. Accurate data about the client (e.g. geographic location, resource use and emissions);
3. Insight in the mitigants and adaptation measures a client has in place (e.g. access to a secondary water source, a sustainable supply of farm inputs, an electrified fleet of trucks or own renewable energy production);
4. Further improvement in our credit analysts’ knowledge of C&E risks and how they could impact the different aspects of the client's business (sector, market, resource use, production process, and so on).

All the while, the understanding of C&E risks keeps evolving within the industry as a whole, which requires continuous improvement of our methodology.
Governance
Roles & Responsibilities

Supervisory Board
The Supervisory Board is responsible for oversight, including oversight of climate-related matters. For more detail, see the report of the Supervisory Board in our Annual Report. The Supervisory Board receives regular updates from the Managing Board on sustainability issues and in specific cases, such as nitrogen, it establishes a dedicated task force.

Managing Board
The Managing Board (MB) sets Rabobank’s sustainability ambition and is accountable for the group sustainability strategy and roadmap. The Chief Sustainability Officer reports to the Chair of the MB. The MB approves the sustainability strategy/roadmap, ensures that sufficient resources are available for sustainability initiatives, and receives monthly progress updates on the key (strategic) sustainability initiatives – and escalations in case impediments arise. If needed, the MB will take corrective action. In addition, the MB members responsible for the business lines are ambassadors for the Food Transition, Energy Transition, and the Transition to a More Inclusive Society.

Sustainability Implementation Team
The Sustainability Implementation Team (IMT) consists of MB-1 representatives of the key domains and is chaired by the Chief Sustainability Officer. The IMT ensures the implementation of sustainability decisions across the bank and in their own domains, and approves implementation plans for key sustainability topics.

It also provides recommendations to the MB on decision making regarding sustainability strategy, ambitions, and resources (e.g. FTEs). The IMT is mandated to guide and align the different sustainability activities within Rabobank. The approval of our sustainability policies is not in scope of the IMT. The approval of sustainability policies follows the regular governance, which runs through the Management Teams (MTs), MB, and Risk Management Committee Group. The business is responsible for delivery and compliance with our sustainability policies.

The ESG governance structure comprises the Sustainability Implementation Team (meeting bi-weekly), supported by a Sustainability Focus Group, a Technical Review Committee, and a Sustainability Data and IT Committee. The mandate, and roles and responsibilities of the IMT and the supporting committees are detailed in the Terms of Reference (ToR) of each committee. These are discussed and approved by the IMT, with the exception of the ToR of the IMT, which is approved by the MB.

Risk Management Committee Group
The Risk Management Committee at Rabobank Group level is mandated by the MB to oversee the implementation of the risk management framework, perform risk monitoring and reporting, and perform oversight of new risk regulation including climate-related and ESG risks. The RMC Group is chaired by the Chief Risk Officer (CRO) and includes members of the senior management. The RMC Group provides oversight of the firm’s Risk Appetite Statement, which describes the levels and types of risks that Rabobank is willing to accept in order to achieve its strategic goals while remaining in compliance with regulatory requirements, including climate-related guidance. As part of its oversight, the RMC Group receives updates on our risk management approach to climate risk, including our approaches to stress testing and our integration into existing risk management processes.
KPIs and Remuneration
Integrating sustainability and climate into our business activities is of the utmost importance to our sustainability ambitions. Based on our strategic direction, we develop appropriate business plans with targets that are aligned with or aggregated in the KPIs of the MB. Our business entities work closely with the Sustainability Department in setting our sustainability ambitions and goals. Rabobank Group has a remuneration policy that is in line with our cooperative objectives: we strive for remuneration at the median of the market and have a very limited role for variable remuneration. Our MB is not entitled to variable remuneration. Our performance targets include (where relevant) the bank’s ESG objectives. All members of the MB have a shared KPI set with three sustainability KPIs with regard to products and services, customer performance, and carbon footprint. One of the KPIs is a CO2 emission reduction target for our own business operations. At least half of the performance management indicators are linked to non-financial KPIs.

Managing Board Key Performance Indicators
As of 2022, our Paris Alignment objectives have also been directly linked to the performance evaluation of MB members. As a group, the MB has three key climate impact indicators included in its KPIs. In addition, individual MB members have also been assigned specific Paris Alignment KPIs related to their domains.

<table>
<thead>
<tr>
<th>KPIs</th>
<th>2022 target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progress to Paris: % of total assets with carbon footprint/financed emissions measured</td>
<td>70%</td>
</tr>
<tr>
<td>Progress to Paris: % of total assets with Paris Aligned targets</td>
<td>35%</td>
</tr>
<tr>
<td>Progress to Paris: number of Business Units with Paris Alignment plan (including portfolio steering)</td>
<td>4</td>
</tr>
</tbody>
</table>

Skills & Culture
Board-level Training / Senior Management
The Supervisory Board and the Managing Board follow educational sessions with respect to sustainability. For instance, the Supervisory Board looked in detail at the energy transition and the development of the Carbon Bank.

Employee Training
Empowered Employees is one of the strategic cornerstones of our strategy. We aim to provide a good inclusive working environment for our employees. With regard to sustainability, we developed a "Grow Green" e-learning course for employees and have set up an ambassador network for sustainability. We have also trained wholesale bankers, rural relationship managers, mortgage advisers, investment advisers, and risk professionals, and we have developed a climate risk training with the Dutch Banking Association for bankers.

Communication
In order to increase awareness about climate impact and risks, we have intensified internal and external communication. The Impact Report has been instrumental in highlighting our approach and baseline of scope 1-3 emissions and we also conducted sustainability marketing campaigns. We activated and informed our own employees via the aforementioned Grow Green initiative. Finally, collectively with other banks in the Dutch Banking Association, we communicated on climate and propagated the importance of climate transitions (see for example: publication of NVB).
Looking Forward
Looking Forward

This report is an early milestone on our road to a low-carbon, climate-smart future. In our 2021 Impact Report (February 2022) we disclosed our financed emissions for 85% of our climate-material on-balance sheet loan portfolio. This report discloses our interim (2030) emissions reduction targets for approximately 70% of these emissions and provides an overview of our initial transition plans for the sector/region combinations in scope. We will continue to build on this work, improving the scope and accuracy of our disclosures and we will report on our progress towards the aforementioned goals.

Paris Alignment

For our own operations we will work to develop footprints and targets for our offices outside of the Netherlands. At the same time, we will continue to expand the scope of our financed emissions calculations with the goal of having 100% of our climate-material assets in scope by 2025. One of our main priorities is to include the financed emissions of our Trade Commodity Finance portfolio (EUR 12 billion in 2020) in our future disclosures, as this portfolio contains significant exposures to high-emitting sectors (F&A, Energy, and Mining & Metals). Examples of additional, near future measures and initiatives to help ensure Paris Alignment are listed below:

Client Level

- We will expand our pricing incentives and offer lower interest rates for frontrunners and higher rates for “laggards” among a broader group of clients starting with other F&A sectors in 2022 and for Industry, Transport and Commercial Real Estate sectors in 2023;
- We will hold individual sustainability dialogues with all our Dutch corporate clients with more than EUR 1 million in financing over the next two years and we will have individual Sustainability Account Plans for all our Wholesale clients by 2024;
- From 2027 (or earlier if required by law), we will only finance clients in sectors defined by NZBA as high-emitting if they have science-based carbon emissions reductions targets in place for 2030 and beyond, that are aligned with a pathway to net-zero;
- We will increase communications to all our clients and to other stakeholders about climate-related solutions that we offer and about possibilities to increase their resilience to climate-related risks. To support these efforts, we will increase our climate-related sectoral research and client campaigns about sustainable financial solutions, such as on how to improve home energy efficiency. We will expand our Transition Desks, like our Circular Economy Desk, where clients can ask questions about transition financing. We will also continue to encourage our private clients to choose investment products with a higher sustainability performance compared to the reference scenarios and to choose sustainable savings schemes, such as savings linked to de Groenregeling in the Netherlands.

System/Economy level

- We will continue to make our practical knowledge available to other stakeholders, for example, by participating in consultations about sustainability regulations and standards, such as the new E.U. sustainable taxonomy proposals and EFRAG consultations;
- We will continue our cooperation with knowledge institutions such as Wageningen University, the Technical University of Delft, the University of Melbourne, and Deltares, among others, and with network partners such as UNEP FI and WBCSD.

Portfolio Level

- We will continue to expand and strengthen climate provisions in our policies and lending criteria. In doing so, we aim to steadily reduce exposure to unabated high-emitting economic activities for which feasible low-carbon alternatives are available;
- We will manage our fossil fuels portfolio in line with the Net-Zero Emissions scenarios of the IEA Net-Zero by 2050 scenario (NZE). From 2023, we will gradually reduce the combined volume of traded oil and gas we finance. By 2030 this combined volume will be 20% lower than in 2022.

Parallel to this work, we will continue to improve the data quality we use in our financed emissions calculations. This will be facilitated partly by an increase in the number of clients self-reporting their GHG emissions, as new regulations, such as the EU Corporate Sustainability Reporting Directive, are finalized and implemented. And we expect our large business clients to share their own Paris Alignment plans with us. We are also introducing carbon calculators to our farming clients in several regions to help them get better insights into their carbon footprints. Despite these efforts, we expect significant gaps in client-reported emissions to continue for the foreseeable future. Therefore, we will continue to work with data providers in the climate data market to get access to more granular and high-quality data.
We will also update the methodologies and tools we use to measure, benchmark, and set emissions targets. In particular, we will continue to engage with our B4ICA partners to learn how we can best apply emerging standards for the F&A sector, such as the recently released SBTi FLAG guidelines and the upcoming GHG Protocol on Land Use and Removals (expected 2023). The latter will include new guidance on measuring emissions and removals related to land use and land-use change, which could have a significant impact on the financed emissions of our F&A portfolio.

**Risk**

Building on the experience, momentum, and lessons from the ECB stress test, the climate stress test will serve as a stepping stone to further integrate and improve internal (climate) stress-testing capabilities. This stress test will be better tailored to our portfolio and will consider scenarios that are impactful for our clients specifically. In particular, we will treat F&A not as one sector, but we will distinguish between sub-sectors such as crops, dairy, and F&A manufacturing. Furthermore, by extending the calculations of our financed emissions into the future (alongside 30-year projections of our balance sheet), we will gain insights on the propagation of portfolio choices made today.

As part of our climate risk management, we will continue to work on a climate-risk assessment at the client level to engage with our clients on climate risks, such as the transition to a low-carbon economy and other risks, including the physical risks we identified in the climate risk heatmaps. These assessments will provide us a more detailed understanding of the risks and challenges our clients are facing and help us to better understand what their path to transitioning could be.

The progress made on risk identification and assessment in 2022 will be used to take further steps to inform our business strategy and planning as well as our risk appetite. For example, the low-carbon transition pathways for specific sectors and regions will be part of the yearly Medium Term Plans for the business and the Risk Appetite Statements. The key lessons from the scenario analyses and stress testing form the basis for further strategy setting and providing insights on our climate change resilience. We use our heatmaps for the vulnerable sector approach and sector outlooks to steer the risk strategy and credit journey of our clients.

**Reporting Cycle**

The climate-related disclosures in this year's reports used 2020 data. This two-year reporting gap differs from the standard one-year gap that is the norm in most financial reporting systems. This difference is due to the fact that the nationally reported GHG emissions data that we use to make our financed emissions calculations were not disclosed in time for us to use the previous year's data for most regions. Therefore, we had to use the data from two years ago and, in some cases, even older data. As the number of clients who report on their own GHG emissions increases, we will become less dependent on top-down calculations and national emissions data. Nonetheless, we anticipate that we will have to continue to work with a two-year gap for at least the next two reporting cycles.

**Beyond Climate – Sustainability Reporting**

Climate change represents an urgent challenge that must be addressed immediately. However, it is not the only sustainability challenge that our societies are facing. And while we acknowledge and support the need for companies and financial institutions like Rabobank to step up their efforts in combating climate change, we are acutely aware that other environmental issues also require urgent attention. Protecting biodiversity, reducing pollution, protecting water resources, reducing waste and the transition to a circular economy are related to climate change and are all part of our broader sustainability approach, along with other important issues such as social justice and inclusion. We have highlighted our key activities in these areas in our recent Impact Report. As we continue to develop and integrate them into our day-to-day business, we will also take similar steps towards a more integrated approach to reporting. This more comprehensive approach is already visible in our Impact Report.
Disclaimers

This report is published by Coöperatieve Rabobank UA ("Rabobank") in the Netherlands and is written from a Dutch law perspective. Please note that this report has not been audited by an external auditor.

This report contains climate-related and other forward-looking statements and metrics, such as targets, emission reduction pathways, forecasts, estimates and statements on Rabobank's current intentions regarding its Paris Alignment goals. Although Rabobank believes the statements have a reasonable basis and the metrics, targets and pathways described in this report are stated to the best of Rabobank’s abilities and in good faith, they are not certain and involve various (unknown) risks and assumptions. Important limitations and challenges we faced in writing this report are described in the About This Report section.

Rabobank, therefore, stresses that the report must be read against the background as set out in the About This Report section. All parts of the report form an integrated whole, and it should be read as such. Nothing that is stated or implied in this report, or its annexes, is intended to, or shall create or grant, any right of, or any cause of action to, by or for any person or legal entity other than Rabobank.

Please note that the forward-looking statements in this report only reflect the knowledge, views and intentions of Rabobank at the date of publishing of this report. Some of the statements contained in the report are not historical facts, including without limitation, the forward-looking statements based on the current views and assumptions of Rabobank. Such statements may involve known and unknown risks and uncertainties that could cause results, performances or events to differ materially from those expressed or implied in statements in this report. Forward-looking statements, future results, performance of the bank and external events may be affected by a variety, or combination, of uncertainties and external factors, including but not limited to (in random order):

- changes in general economic or political conditions and customer behavior, globally or in the segments or regions Rabobank operates in;
- geopolitical risks, political instabilities and policies and actions of any governmental or regulatory authorities;
- changes in performance of financial markets;
- changes in government policies, regulations and laws and the interpretation and application thereof;
- the availability of reliable (emissions or client) data;
- uncertainties in, and the use of, (emissions) calculation methodologies and models;
- new, or changed, scientific (based) insights in relation to the content of this report and any changes arising out of these insights;
- technological developments;
- changes arising out of market practices and standards, including emerging and developing ESG standards;
- our ability to meet minimum capital and other prudential regulatory requirements;
- operational, regulatory, reputational, transition and other risks in connection with ESG-related matters;
- our ability to attract and retain key personnel for our daily operations and the execution of the plans set out in this report.

Please note that this is not a commercial report, nor is it intended as such. Neither this report, nor any part of this report or any statement in this report is intended as a commercial offer or invitation.

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Annex
References

Rabobank References
Glossary

Banking for Impact on Climate in Agriculture (B4Ag) Banking for Impact on Climate in Agriculture has been established by Rabobank, together with a group of international banks, scientists, and experts, to develop carbon footprint methodologies and climate objectives in the agricultural sector in order to guide the sector towards a low carbon transition.

Net-Zero Banking Alliance (NZBA) Rabobank’s Paris Alignment strategy follows the NZBA guidelines drawn up by the United Nations under the Collective Commitment to Climate Action. The guidelines outline a number of principles, covering the timeframe in which targets should be set, requirements for review and the use of widely accepted sources, among others. They also specify which carbon-intensive sectors are to be prioritized: agriculture, aluminium, cement, coal, commercial and residential real estate, iron and steel, oil and gas, power generation, and transport.

The Paris Agreement is a legally binding international treaty on climate change. Its goal is to limit global warming to well below 2, preferably to 1.5°C, compared to pre-industrial levels.

Partnership Carbon Accounting Financials (PCAF) PCAF is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the GHG emissions associated with their loans and investments, helping prevent the worst impacts of climate change and future-proof business growth.

The Financial Stability Board created the TCFD to develop recommendations on the types of information that companies should disclose to support investors, lenders, and insurers in appropriately assessing and pricing the different risks related to climate change.

Science-based targets provide a clearly-defined pathway for companies and financial institutions to reduce GHG emissions, helping prevent the worst impacts of climate change and future-proof business growth.

As defined by the GHG Protocol: Scope 1 covers direct GHG emissions from owned or controlled Emissions sources; Scope 2 covers indirect GHG emissions from the generation of purchased electricity, steam, heat, and cooling consumed by the reporting company; Scope 3 includes all other indirect GHG emissions that occur in the value chain.

The likelihood that a borrower will fail to pay back a debt.

The National Climate Agreement contains agreements with the sectors on what they will do to help achieve the climate goals.

Sector/region combinations For the first iteration of the Paris Alignment project, 12 specific sector/region combinations have been selected. These reflect what has been considered the priority, given the materiality for Rabobank, the carbon-intensity of specific sectors and specific requests from the NZBA.

Scope 1, 2 and 3 emissions Carbon dioxide equivalent is the number of metric tons of CO2 emissions with the same global warming potential as one metric ton of another greenhouse gas.

Temperature Target An overall environmental (and humanitarian) temperature level increase which should not be exceeded, which constitutes the basis for subsequent bank, sector or business targets. By joining the Net-Zero Banking Alliance, Rabobank commits to do everything possible to ensure that our actions do not cause more than 1.5°C temperature increase. Generally, this means moving to Net-Zero by 2050.

Tonne-kilometres An overall environmental (and humanitarian) temperature level increase which should not be exceeded, which constitutes the basis for subsequent bank, sector or business targets. By joining the Net-Zero Banking Alliance, Rabobank commits to do everything possible to ensure that our actions do not cause more than 1.5°C temperature increase. Generally, this means moving to Net-Zero by 2050.

Emissions intensity (EI) Ratio between the financed emissions and the production output. Can be assessed at different levels: client, sector/ region combinations, full portfolio. Can be expressed as physical emission intensity (production level expressed in physical units, in terms of clients’ production output) or economic emission intensity (production level expressed in economic units, in terms of clients’ revenues).

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# Outstandings

## Outstandings 2020 & 2021

<table>
<thead>
<tr>
<th>Sector</th>
<th>Region</th>
<th>Business</th>
<th>Outstanding FY 2020 (in EUR billions)</th>
<th>% In-scope portfolio FY20</th>
<th>Outstanding FY2021 (in EUR billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food Transition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dairy</td>
<td>Netherlands</td>
<td>Retail NL</td>
<td>11.3</td>
<td>3.1%</td>
<td>10.8</td>
</tr>
<tr>
<td>Pig Farming</td>
<td>Netherlands</td>
<td>Retail NL</td>
<td>1.6</td>
<td>0.4%</td>
<td>1.5</td>
</tr>
<tr>
<td>Horticulture</td>
<td>Netherlands</td>
<td>Retail NL</td>
<td>3.0</td>
<td>0.8%</td>
<td>3.0</td>
</tr>
<tr>
<td>Beef</td>
<td>Australia</td>
<td>Rural</td>
<td>2.9</td>
<td>0.8%</td>
<td>3.0</td>
</tr>
<tr>
<td>Beef</td>
<td>United States</td>
<td>Rural</td>
<td>1.5</td>
<td>0.4%</td>
<td>1.7</td>
</tr>
<tr>
<td>Dairy</td>
<td>New Zealand</td>
<td>Rural</td>
<td>4.3</td>
<td>1.2%</td>
<td>4.3</td>
</tr>
<tr>
<td>Soy</td>
<td>Brazil</td>
<td>Rural</td>
<td>1.9</td>
<td>0.5%</td>
<td>2.1</td>
</tr>
<tr>
<td>Tractors</td>
<td>International</td>
<td>DLL</td>
<td>8.8</td>
<td>2.4%</td>
<td>3.4</td>
</tr>
<tr>
<td><strong>Energy Transition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Real Estate</td>
<td>Netherlands</td>
<td>Mortgages</td>
<td>189.0</td>
<td>52.4%</td>
<td>190.0</td>
</tr>
<tr>
<td>Commercial Real Estate</td>
<td>Netherlands</td>
<td>NL + Wholesale</td>
<td>19.4</td>
<td>5.4%</td>
<td>21.0</td>
</tr>
<tr>
<td>Transport</td>
<td>NL + International</td>
<td>NL + Wholesale</td>
<td>5.1</td>
<td>1.4%</td>
<td>4.7</td>
</tr>
<tr>
<td>Energy/ Power generation</td>
<td>International</td>
<td>Retail NL</td>
<td>0.9</td>
<td>0.3%</td>
<td>1.1</td>
</tr>
<tr>
<td>Portfolio in scope 2020 Road to Paris</td>
<td>Netherlands</td>
<td>Wholesale + Project Finance</td>
<td>3.9</td>
<td>1.1%</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Portfolio in scope 2020 Impact Report</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio in scope 2020 Impact Report</td>
<td>253.5</td>
<td>70%</td>
<td>250.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Portfolio</td>
<td></td>
<td></td>
<td>422.4</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Outstandings as used by the business in their blueprints, are gross figures and as such may not align to disclosed figures due to the latter having accounting corrections, provisions and such matters applied to them.
Climate Materiality

"Follow the Money" and Impact
More than 200 financial institutions use the PCAF Global GHG Accounting & Reporting Standard as the methodology for calculating financed emissions. We have been a member of PCAF since 2019 and are an active participant in several working groups that continue to review and develop the standard. According to PCAF, ‘follow the money’ is a key principle for GHG accounting of financial assets, i.e., the money should be followed as far as possible to understand and account for the climate impact in the real economy. Therefore, to calculate our financed GHG emissions, a logical starting point is to analyse our balance sheet and determine which sections of the balance sheet should be included when calculating GHG emissions. The criteria relevant to this selection process are climate materiality and portfolio weighting.

• Climate materiality refers to the impact of our balance sheet on the climate. Impact can be both negative and positive. Since Paris Alignment focuses on financed emissions, in this initial analysis only negative environmental impact will be considered. Positive impact will be taken into consideration at later stages, such as during target setting processes, when methodologies are sufficiently well developed. In this report we focus on components of the balance sheet that potentially lead to high levels of financed emissions.

• Portfolio weighting means that if the monetary value of an asset category on the balance sheet is equal to or bigger than 5% of all assets, we will categorize it as high priority. If the value of an asset category is lower than 5%, it will be categorized as low priority and will not be included in the initial calculations.

It is important to note that while our longer-term ambition is to determine the climate impact of all climate-material core activities, our immediate focus will be on the highest emitting portions of our portfolio where we have the most influence and responsibility, and where accepted target-setting methodologies (and data) are available.

Scope of Paris Alignment Methodologies and Targets project
In this section we explain the choices and considerations made in the determination of the initial scope of the Paris Alignment efforts. As said, it is our ambition to determine the climate-impact of all material core activities, where materiality refers to the magnitude and likelihood of the effects an activity can have on the climate (positive or negative). The availability of calculation methods for climate impacts, however, also comprises a boundary.

1. Cash and cash equivalents refer to highly liquid assets, such as bills, coins and short-investment securities with maturity periods of 90 days or less. Since using the current carbon counting methodologies GHG emissions cannot be attributed to these assets they will not be included when calculating our financed emissions.

2. For Total Loans and Advances the ability to identify their potential contribution to GHG emissions depends on whether the use of proceeds of these loans and advances is known or unknown. If the use of proceeds is known, associated GHG emissions can be identified, calculated and should be reported. Within this category, this category is further broken down as follows:
   • Government clients consist of two sub-categories: ‘Finance leases’ and ‘Other’. Finance leases will not be included since they do not meet the above-mentioned operational control criteria (climate materiality and portfolio weighting);
   • Reverse repurchase transactions and securities borrowing are used for short-term borrowing and lending, often overnight. No GHG emissions can be attributed to these asset classes;
   • Interest rate hedges are used to manage interest rate risk and concern short-term agreements. No GHG emissions can be attributed to these asset classes;
   • Private Sector Loan Portfolio. This line item represents almost 65% of all assets and is made up of the exposures by Private Clients and Business Banking (both under Domestic retail banking), Rural, Wholesale (NL + International) and DLL (leasing). As the use of proceeds of these exposures are better known, these exposures are candidates for carbon footprinting. Following the Net-Zero Banking Alliance guidelines. We have selected 12 high-emitting sector/region asset combinations for the first phase (2022-2023) of our Paris Alignment approach.
3. **Financial assets** comprise debt securities and equity instruments. In general, this asset category within Rabobank consists of stocks and bonds. Bonds cover the greatest part of all financial assets and the main motive for investing in them is to manage liquidity risk. More detailed guidance on such financial products are under development by the GHG Protocol and PCAF Standard for the Financial Industry. We still need to evaluate alternative methods (such as Trucost’s evaluation of approaches to sovereign bond carbon accounting) that are currently available for calculating financed emissions related to (sovereign) bonds. Given this need for further investigation to better understand the climate materiality of this asset category, it will not be included in this initial phase of our Paris Alignment approach.

4. **Loans and advances** to other banks comprise all loans and advances arising out of banking transactions to domestic or foreign credit institutions by the credit institution drawing up the balance sheet, regardless of their actual designations. This category will not be included in GHG emissions since their designation is not known and their nature is short term.

5. **Derivatives** generally comprise foreign exchange contracts, currency and interest rate futures, forward rate agreements, currency and interest rate swaps and currency and interest rate options (written or acquired). This category will not be included in GHG emissions since their designation is not known and their nature is short term.

6. **Other assets.** Around EUR 1.5 billion of “Other assets” consists of the bank’s real estate (offices and interior). GHG emissions of our real estate are accounted for in our own operations GHG reporting. Non-real estate for operational lease will not be included since this category does not meet the operational control criteria that are part of the financial control approach of the GHG protocol. Only limited information is available about the residual balance of other assets and its contribution to emissions remains unknown. Based on the arguments above and the non-financial materiality of this category, other assets will be excluded from GHG calculations in the first phase of our Paris Alignment approach.
Selection of Benchmark Decarbonization Pathways

We have reviewed a considerable number of different externally provided Benchmark Decarbonization Pathways (BDPs) as reference pathways for our target setting.

The following five criteria were leading in our choice of BDPs:

1. must be aligned with a 1.5°C scenario,
2. must be from a reliable source*,
3. granularity level should be applicable for different sectors and regions,
4. should include all relevant GHGs, and
5. should be based on up-to-date information.

*The following five different sources were chosen:

- The Carbon Risk Real Estate Monitor (CRREM) for residential and commercial real estate exposures,
- International Energy Agency's Net-Zero Emissions (IEA NZE) scenarios for energy- and transport-related exposures,
- The SBTi Food, Land and Agriculture (SBTi FLAG) for F&A exposures outside the Netherlands,
- The Dutch Climate Agreement (DCA) for F&A exposures in the Netherlands, and
- The Convenant Energietransitie Glastuinbouw 2021-2030 (to be finalized).

Below we elaborate on the considerations underpinning these choices.

Pathways for Real Estate, Energy, and Transport

Below we describe how we meet the five criteria as mentioned above.

1. The scenarios underlying the pathways must be aligned with a 1.5°C scenario.
CRREM pathways follow a transparent methodology that starts with the global carbon budget and emission pathway that is compatible with limiting global warming to 1.5°C. The IEA NZE scenario is consistent with a 1.5°C scenario and exhibits no or low temperature overshoot. Similarly, SBTi FLAG benchmarks are based on 1.5°C scenarios with low or no-overshoot.

2. The reliability of the source played a major role when choosing our BDPs.

- The underlying data for CRREM pathways come from widely acknowledged sources, such as IPCC and IEA. Furthermore, CRREM uses a downscaling methodology that is based on the Sectoral Decarbonization Approach (SDA) promoted by SBTi. Thus, CRREM is aligned with SBTi. The official CRREM partners include GRESB, Measurabl, MSCI, BuildingMinds, Verdani, Deepki and Apilize. CRREM pathways are constantly improving through public feedback and international consultation.
- The IEA is a well-known authority in the energy field. IEA reports are created in collaboration with sector specialists and are peer reviewed by external institutions. Moreover, the NZBA explicitly lists IEA as a well-recognized source.
- The SBTi is one of the most authoritative organizations in target setting and benchmarks. The SBTi is a partnership between the Carbon Disclosure Project (CDP), the United Nations Global Compact, World Resources Institute (WRI) and the World Wildlife Fund (WWF). SBTi relies on multiple pathways from scientific sources to build the target-setting benchmark for Food, Land and Agriculture (FLAG).

1 GFANZ Guidance on Use of Sectoral Pathways for Financial Institutions
3. Regional and sectoral granularity is important to realistically reflect the heterogeneity inherent in decarbonization pathways.

It is still a challenge to obtain region- and sector-specific BDPs for some of our Sector/Region combinations. For the energy and transport sector the IEA NZE scenarios provide a decent breakdown with information for aviation, shipping, truck transport, energy and power generation. However, the data is only provided on the global level. In contrast, SBTi FLAG offers both an agricultural sector benchmark (absolute reduction-based) and a regionalized (intensity-based) commodity-specific benchmark that companies can choose to use according to a set of stated criteria. We have used the regionalized, intensity-based commodity pathways to guide target setting for our international Rural F&A portfolio. The CRREM pathways have been specifically developed for the commercial and residential real estate sector and are country specific.

4. All relevant greenhouse gases (GHGs) should be included in the benchmarks.

The CRREM pathways are based on annual operational greenhouse gas (GHG) emissions per square meter of gross internal area (kgCO2e/m²/yr), where relevant GHGs are converted to carbon dioxide equivalents (kgCO2e) (CRREM also has energy-intensity pathways available (kWh/m²/yr). SBTi FLAG includes carbon dioxide emissions from land use change as well as methane, nitrous oxide, and carbon dioxide emissions from land management. In the IEA NZE scenario, only carbon dioxide emission are modelled (except for the energy sector, where methane and nitrous oxide emissions are also modelled). For all pathways based on IEA NZE scenarios, only carbon dioxide emission were included in target setting.

5. Benchmarks should be based on up-to-date information.

- SBTi FLAG was recently updated,
- the IEA NZE was published in 2021, and
- CRREM pathways stem from 2021 with baseline data from 2018.

While these benchmarks are expected to be updated regularly, we will also frequently review the chosen pathways. The review process will include examination and comparison of further available sources, including the newly released SBTi FLAG pathways. Our benchmark decarbonization pathways will therefore be subject to changes in the future.

Pathways for Dutch F&A

For our three Dutch F&A sector/region combinations we have chosen to use the Dutch Climate Agreement rather than the SBTi FLAG commodity pathways. Our choice to use national reference pathways instead of SBTi FLAG is motivated by several reasons:

1. The national pathways are more granular and contain specific absolute reduction targets for these sectors. There are no SBTi FLAG regional pathways for the Netherlands, only for Western Europe, which means that these pathways are less granular than the pathways contained in the Dutch Climate Agreement.
2. Our market share in these sectors (>75%) is large enough to justify the use of the absolute reduction pathway as the sectoral reduction targets can be translated into portfolio targets.
3. The national targets (past and present) have been developed through a multi-stakeholder approach that included government, business (including Rabobank), scientific and civil society participants. They are therefore the common reference point for the main actors involved in transitioning the sectors to <1.5°C pathways.
4. The national targets are scientifically scrutinized by PBL Netherlands Environmental Assessment Agency, which also annually reports on the sectors' progress towards achieving these targets and whether they are still aligned with a <1.5°C warming scenario.

Dairy and Pig Farming Sectors

For the Dairy and Pig Farming sectors, we are using pathways based on national absolute emissions reduction targets. Currently those targets are specified by the Dutch Climate Agreement. However, the Dutch government is currently formulating new, more stringent sectoral targets. Once these targets are defined, we will update our reference pathways and reduction targets for these two sectors accordingly.

Horticulture Sector

As there are currently no SBTi FLAG decarbonization pathways for the greenhouse horticulture sector, we have taken the reference paths and targets set by the Dutch Climate Agreement and the Sector Covenant (Convenant Energietransitie Glastuinbouw 2021-2030) as the basis for our Paris Alignment benchmark emissions reduction pathways for our primary Horticulture portfolio in the Netherlands.

Each year researchers from Wageningen Economic Research – WUR calculate the CO2 emissions for the Dutch Horticulture sector using the IPCC method. This number is published in the Energiemonitor van de Nederlandse glastuinbouw report.