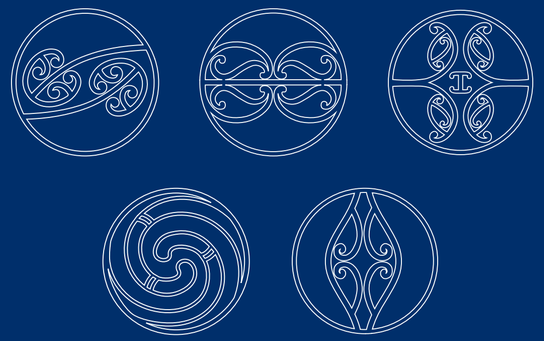
Climate report 2023

Contents

Throughout our reports we include toi Māori (Māori art) designs co-created by Hāmiora Bailey (Ngāti Porou Ki Harataunga, Ngāti Huarere). These pattern systems are inspired by toi whakairo, tukutuku, and tāniko (traditional Māori art forms). They act as a poutokomanawa (central pole) along the spine of the report providing support for the content, and Visualising Te Pēke o Aotearoa (the Bank of New Zealand) on its haerenga (journey) to create a more sustainable future. As well as representing our people, these toi Māori work to illuminate BNZ's strategy of integrating te ao Māori (the Māori world) into all our business practices, policies, products and services.

Taki Toru (the rising or towing of three), is a reoccurring element within the Whare Tīpuna (communal meeting space). In this report, Taki Toru is used to honour our natural environment and Ngā Atua (the gods). Ranginui (the sky father), Papatūānuku (the earth mother) set an example for us in how to Manaaki (hold, protect, foster, and care) for others within this realm, Te Ao Mārama (the natural world of life and light).



Important information

This Report has been prepared on a voluntary basis. BNZ commenced its first annual reporting period for the purposes of Part 7A of the Financial Markets Conduct Act 2013 (FMCA) and the External Reporting Board's Climate Standards (NZCS) on 1 October 2023. This Report for the year ended 30 September 2023 is, therefore, not subject to the climate-related disclosure framework (Framework) prescribed by the FMCA and NZCS. While BNZ has had regard to the Framework in preparing this Report, it makes no representation or statement that the Report complies with the Framework or covers all information that the Framework requires to be disclosed.

This Report is necessarily limited in coverage and is a summary only. BNZ expressly disclaims responsibility for, and makes no representation, and gives no warranty, assurance or guarantee, as to the accuracy, completeness, or reliability of any contents of this Report. BNZ also expressly disclaims all liability for any loss (direct, indirect, consequential, or otherwise) or damage arising from the use of this Report. It contains BNZ's current assessment of the future climate-related risks and opportunities which could affect its business and customers, as well as its current planning to address these risks. This process necessarily involves estimates, projections, and assumptions about the future, which are inherently uncertain and are not forecasts of future performance.

BNZ has set out the basis and limitations of its analysis in this Report and reserves the right to revisit its assumptions and assessments as it develops its understanding of climate-related risks and opportunities, and its response to climate change. This section should be read together with the limitations identified elsewhere in this Report, including as described in Scope, limitations, and methodology below.

Whether or not BNZ meets targets or commitments contained in this Report is subject to known and unknown risks and uncertainties and will depend on a number of factors out of its control, including but not limited to governmental policy, regulatory and economic factors and actions of its customers.

Cautionary note regarding forward-looking statements

This Report contains statements that are, or may be deemed to be, forward looking statements, including climate-related goals, targets, pathways, ambitions, related risks and opportunities, as well as BNZ's current planning to address related risks. By their very nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, many of which are beyond our control and give rise to the possibility that our predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that our assumptions may not be correct, and that our objectives, vision, commitments, goals, targets, and strategies to mitigate and adapt to climate-related risks and opportunities will not be achieved.

Many of the assumptions, standards, metrics and measurements used in preparing this Report continue to evolve and are based on assumptions believed to be reasonable at the time of preparation, but should not be considered guarantees. As a result, the assumptions and judgements underlying climate-related metrics are uncertain and limit the extent to which climate-related metrics are useful for decision-making. The measures and forward-looking statements in this Report reflect BNZ's best estimates, assumptions and judgements (including in relation to customer and other third party data over which BNZ has no control) as at the date of the Report, however, the uncertainty in climate-related metrics, methodologies and modelling may lead to BNZ changing its views in the future.

Certain statements made in this Report use a greater number and level of assumptions and estimates and are over longer time frames than many other disclosures. These assumptions and estimates are highly likely to change over time. Certain statements in this Report are based on hypothetical or severely adverse scenarios and assumptions, and these statements should not necessarily be viewed as being representative of current or actual risk or forecasts of expected risk. In addition, the data underlying our climate analysis and strategy remain subject to evolution over time. As a result, we expect that certain disclosures made in this Report are likely to be amended, updated or restated in the future as the quality and completeness of our data and methodologies continue to improve.

Forward-looking statements may also be made – verbally and in writing – by BNZ's directors or management in connection with this Report. Such statements are subject to the same limitations, qualifications, and assumptions set out in this document. BNZ does not undertake to update any forward-looking statement, whether written or oral, that may be made, from time to time, by BNZ or on its behalf.

Other important information

The Report is provided to inform readers but does not take into account any circumstances of the reader, nor is it financial advice or earnings guidance, nor is it audited. As a result, readers should make their own assessments and not place undue reliance on this Report.

This Report is intended to provide information from a different perspective and in more detail than is required to be included in disclosure statements, offer documents, other securities offering materials or regulatory reports and documents. While certain matters discussed in this Report may be of interest and importance to our stakeholders, the use of the terms "material", "significant", "important" or similar words or phrases should not be read as rising to the level of materiality used for the purposes of securities or other laws and regulations.

This Report includes voluntary disclosures on climate-related opportunities and risks, governance, strategy, risk management and metrics and targets that may not be, and are not required to be, incorporated into our mandatory disclosures, in which we may use a definition of materiality established under applicable laws for the purpose of complying with the disclosure rules and regulations of applicable regulators and applicable stock exchange listing standards.

Nothing in this report shall constitute, or form part of, an offer to sell or a solicitation of an offer to buy or subscribe for any security or other instrument of BNZ or any of its affiliates, or as an invitation, recommendation or inducement to enter into any investment activity, and no part of this document shall form the basis of, or be relied upon in connection with, any contract, commitment or investment decision. Offers to sell, sales, solicitations of offers to buy or purchases of securities issued by BNZ or any of its affiliates may only be made or entered into pursuant to appropriate offering materials prepared and distributed in accordance with the laws, regulations, rules and market practices of the jurisdictions in which such offers, solicitations or sales may be made. Professional advice should be sought prior to any decision to invest in securities.

Third-party references and website references and/or links throughout this Report are provided for convenience only, and the content on the referenced websites is not incorporated by reference into this Report. Such third-party references and website references and/or links do not imply an affiliation, sponsorship or endorsement of any party.

Please refer to the important information contained in the Appendices to this Report, including the glossary in Appendix A for a list of defined terms used in this Report, and Appendix H for information referenced in endnotes.

Overview

Overview

This voluntary Report has been issued by Bank of New Zealand for the year ended 30 September 2023. This Report relates to the FY22 and FY23 financial years, being 1 October 2021 to 30 September 2022 (FY22) and 1 October 2022 to 30 September 2023 (FY23) and operational emissions for the period from 1 July 2021 to 30 June 2022, and 1 July 2022 to 30 June 2023. BNZ's most recent previous Climate Report, published in December 2022 (the 2022 Climate Report), related to information for the financial year 1 October 2020 to 30 September 2021 (FY21), and operational emissions for the period from 1 July 2020 to 30 June 2021. We have covered two financial years (and two operational emission years) in this Report to ensure that FY22 information is addressed and to allow for year-on-year comparison, as we move from voluntary climate reporting to the requirements of the External Reporting Board (XRB) Aotearoa New Zealand Climate Standards ("Climate Standards") from FY24 onwards.

We continue to expand our assessment of climate risk in this Report. Below we set out the increased coverage of this report.

The 2022 Climate Report	This Report
The 2022 Climate Report physical and transition risk analysis covered seven portfolios.	Physical and transition risk analysis in this Report covers the Total Committed Exposure (TCE)[1] of lending to industry sectors[2] in BNZ's Gross loans and advances to customers[3].
The 2022 Climate Report assessed two core physical risks: sea-level rise inundation, and extreme coastal inundation.	This Report includes fluvial / pluvial flooding as a third core physical risk with analysis on the Real estate – mortgage and Property, business, and personal services sectors.
In the 2022 Climate Report our financed emissions calculations covered only the Power Generation and Oil and Gas portfolios, representing 1% of our customer loan book.	This Report covers the TCE and Outstanding Amount (OA)[4] of lending to industry sectors[5] for 2023 financed emissions calculations, representing 99% of Gross loans and advances to customers.

For the financial year 1 October 2023 to 30 September 2024 (FY24), we will report in line with the Climate Standards as a climate reporting entity under the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021.

The Report also restates information contained or referred to in previous reports. This reflects year on year improved access to, and use of, internal and external data, methodologies, systems, processes, and capabilities. We expect this to continue in future reports as the analysis of climate-related risks and opportunities is a developing area, based on future projections, and reliant on available models and information at any given time. BNZ intends to improve on the extent and level of sophistication of climate analysis over time including, for example, the climate models used by us.

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[1]TCE refers to the total amount of irrevocable funding a BNZ customer can access at any time. For example, a customer may have $1 million outstanding to the bank, but we have a TCE to the customer of $2 million, meaning an additional $1 million can be borrowed by that customer if relevant conditions are met.

[2]Loans not secured by geocoded titles have been excluded from our quantitative physical risk analysis as this is location dependent. Loans with no industry classification (e.g. consumer lending comprised in Real estate – mortgage and personal lending) have been excluded from our quantitative transition risk analysis of industry emissions intensity.

[3]Gross loans and advances to customers includes overdrafts, credit card outstanding, housing loans, other term lending and other lending.

[4]OA refers to the actual outstanding loan amount i.e. the value of the debt that the borrower owes to the lender (disbursed debt minus any repayments).

[5]Personal lending comprised of personal loans, overdrafts and credit card debt are excluded.

Scope, limitations and methodologies

Scope

This Report primarily relates to both FY22 and FY23 information. BNZ's previous climate report, published in December 2022, related to FY21 information.

The information presented for all greenhouse gas (GHG) emissions, except financed emissions, is based on a June year end, to align with the regulatory environmental reporting requirements of BNZ's ultimate parent company, National Australia Bank Limited (NAB). For the FY24 report BNZ intends to align the reporting period for this information with the relevant BNZ financial year end, being 30 September 2024.

The Report considers three physical risk types sea level rise inundation, extreme coastal inundation, and pluvial/fluvial flooding, (flooding caused by rainfall and rivers respectively), and uses the Ministry of Business, Innovation and Employment Hīkina Whakatutuki (MBIE) data to determine transition risk, and reports on financed emissions with a varied Partnership for Carbon Accounting Financials (PCAF) score.

BNZ Group Subsidiaries

This Report relates to BNZ and other members of BNZ's financial reporting group, which consists of BNZ, all its wholly owned entities and other entities consolidated for financial reporting purposes and references to we, us, our, the bank and BNZ should be interpreted accordingly. All references to $ in this report are to NZ dollars, and references to FY23 or FY22 are, unless the context otherwise requires, to balances or amounts at the end of each of those financial years, namely 30 September.

BNZ Investment Services Limited (BNZISL) is a BNZ subsidiary and is the manager of BNZ's three managed investment schemes ("the schemes") including the BNZ KiwiSaver scheme. BNZISL will be required to separately report climate-related disclosures in relation to the schemes, by 31 July 2024. BNZISL has its own Board of Directors and governance processes relating to its proposed climate-related disclosures, which are not covered by this Report. However, operational emissions arising from the BNZISL operating entity are included in this disclosure as BNZISL is a wholly owned subsidiary of BNZ. Please refer to Section 4.1 GHG emissions of this Report.

Limitations and methodologies

Information in relation to specific methodologies, assumptions, and limitations adopted or identified by BNZ for the purposes of this Report is set out in the following sections and appendices of this Report:

Physical risk analysis: refer to Section 2.5 and Appendix B of this Report.

Transition risk analysis: refer to Section 2.6 and Appendix B of this Report.

Climate models: BNZ has used climate change models to support its assessment of climate-related risks. Please refer to Section 2.5 and Appendix B for further information on climate models. It is important to note that climate models are projections, not predictions, of a future state and do not capture the full extent of physical hazards which may be experienced in a particular area. Note, this climate modelling is distinct from the qualitative scenario analysis discussed in Section 2.3, in that scenario analysis is a broader analysis of impacts on an organisation, while the climate modelling described in that section is specific to a particular climate variable, for example, extreme coastal inundation.

Geocoded properties: Reference in this Report to 'loans secured by geocoded properties in BNZ's Gross loans and advances to customers' means the TCE of Gross loans and advances to customers which are secured by properties where BNZ has been able to apply a digital geographic location, enabling physical and transition risk analysis to be performed in relation to that property.

GHG emissions (excluding financed emissions): refer to Appendix C – GHG emissions methodology, key assumptions, and limitations.

Sector decarbonisation targets: refer to Appendix D – sector-level targets methodology summary.

Financed emissions: refer to Appendix E – financed emissions methodology, key assumptions, and limitations. We follow the Partnership for Carbon Accounting Financials (PCAF) guidance for estimating and reporting the data quality of financed emissions. A PCAF score of one (1) is best, reflecting verified and disclosed customer emissions. A score of five (5) is worst, reflecting the highest level of uncertainty, for example, using sector average emissions.

BNZ's overall 2023 PCAF data quality scores are 4.32 (based on Outstanding Amount) and 4.36 (based on Total Committed Exposure). These scores reflect significant challenges with sourcing customer level emissions data and a lack of a nationwide programme that generates suitable publicly available emissions metrics for higher data quality financed emissions reporting.

ANZSIC Codes: Industry sector exposures to customers are classified and allocated based on the assigned Australian and New Zealand Standard Industrial Classification (ANZSIC) code for the relevant customer, except for identified conglomerate customers (i.e. customers whose activity covers a number of industry sectors). Our reported financed emissions could be higher or lower if these codes are not correctly assigned to customers. The ANZSIC codes used by BNZ for purposes of this Report are dated and do not reflect some newer types of businesses. BNZ is working to update the ANZSIC codes used by it.

1. Governance

1.1 BNZ Board and Board Committees

BNZ Board

Figure 1: BNZ Board and Board Committees

The BNZ Board is the governance body responsible for oversight and implementation of BNZ's overall strategy, policies, and risk management framework, which includes oversight of climate-related risks and opportunities. The Board has overall responsibility for setting the direction of BNZ's response to climate change and for ensuring climate-related risks and opportunities affecting BNZ and its customers are appropriately identified, managed, and disclosed.

The Board is supported in its management of climate change risks and opportunities by two of the current Board committees, the Board Risk and Compliance Committee (BRCC) and the Board Audit Committee (BAC) (discussed below). BNZ aligns its management of risk with the NAB Group Risk Management Strategy (RMS), which the BNZ Board approves and adopts annually. The RMS details BNZ's material risk categories and risk management practices. The Board also approves BNZ's Risk Appetite Statement (RAS) for all material risk categories.

For more information, please refer to Section 3, Risk Management of this Report.

The Board meets at least eight times per year, including four quarterly Board and Board Committee meetings and four special purpose meetings. The latter are convened to discuss specific governance matters, such as BNZ's strategy, and the approval of BNZ's financial statements and related disclosures.

At its quarterly meetings, the Board receives and discusses verbal updates on emerging risks, which may include climate related risks, from relevant members of the Executive Team, including the Chief Risk Officer (CRO). Climate-related updates to the Board are supported by BNZ's Enterprise Sustainability Team.

The Board also received and discussed various updates on ESG and climate-related topics (including climate related risks) throughout the period, including Board papers and training and focus sessions.

Skills and competencies

The Board monitors its skills and competencies to identify any areas where further training, knowledge, and/or expertise may be required to ensure that it can provide proper oversight of risks and opportunities (including climate risks and opportunities) relevant to BNZ. The Board also commissions an external review of its performance and skills at least every three years, which was most recently undertaken in April 2022.

Board Committees

Board Risk and Compliance Committee

The BRCC is responsible for supporting the Board with its oversight of risk management, including climate risk, within the material risk category of sustainability risk. The BRCC meets five times a year, or more regularly if required. The BRCC considers climate-related risks as reported by the CRO, and BNZ's performance in managing sustainability risk. Reporting on risk appetite settings for Sustainability Risk and climate-related risk settings is provided by the CRO to the BRCC via a RAS dashboard.

The BRCC provides updates to the Board and makes recommendations as required to the Board. Each year the BRCC reviews, amends where required, and, following discussion with management, considers whether to recommend the adoption of the RMS and the RAS to the Board for its approval.

Board Audit Committee

The Board has delegated responsibility for oversight of BNZ's climate-related disclosures to the BAC[6]. This was reflected in an updated charter for BAC, which took effect from 14 September 2023. BAC is now responsible for reviewing BNZ's voluntary and mandatory climate-related disclosures and, following discussion with management and external auditors or assurance providers as required, considering whether to recommend their approval by the Board.

[6]Prior to 14 September 2023, BAC was known as the New Zealand Regional Audit Committee.

1.2 BNZ Executive Management

Executive Risk and Compliance Committee

Figure 2: BNZ Executive Management

The Executive Risk and Compliance Committee (ERCC) supports the CEO in oversight of BNZ's management of risk and is responsible for overseeing the effectiveness of risk management within BNZ, including material sustainability risk (which includes climate risk). The ERCC is supported in this area by the ESG Executive Committee (ESG EC) (formerly the Climate Steering Group) and the ESG Risk Management Forum (ESG RMF).

All Executive Team (ET) members sit on the ERCC. At a management level the ERCC delegates decision making and oversight, approvals and management of sustainability risk, climate integration, climate disclosure and the setting of decarbonisation targets to the ESG EC. The ESG EC is supported in this area by the ESG RMF. Reporting on risk appetite settings for Sustainability Risk and climate-related risk settings is provided by the CRO to the ERCC via a RAS dashboard.

ESG Executive Committee (ESG EC)

The ESG EC[7] comprises a number of ET members and other direct reports of ET members with sustainability or climate-related accountability or role responsibilities, including the Chief Sustainability Officer. The Executive, Commercial Services and Responsible Business is the Chair of ESG EC.

The ESG EC was established in November 2022, initially to lead the oversight of BNZ's setting of emissions reduction (decarbonisation) targets relating to its commitments as part of the Net Zero Banking Alliance (NZBA). See Section 4.4 of this Report for more information on BNZ's sector decarbonisation targets. Since it was established the ESG EC has met monthly (other than in January and July 2023). In May 2023, the ESG EC became a sub-committee of the ERCC and provides minutes from its meetings to the ERCC.

The ESG EC has the authority (by delegation from ERCC and as specified in its charter) to consider climate-related risks and opportunities including:

- strategic direction and accountability for initiatives, obligations, and commitments in response to climate change and ESG
- decarbonisation targets and position statements for specific industries/portfolios
- climate reporting and disclosures
- physical and transition climate risk modelling
- climate risk appetite settings in relation to customers with sustainability risk factors
- BNZ's Sustainable Finance Framework, which is available on BNZ's website.

The ESG EC generally meets monthly and considers progress updates on BNZ's climate-related initiatives and commitments, provided by the ESG RMF[8].

ESG Risk Management Forum (ESG RMF)

Members of the ESG RMF are key senior leaders from across BNZ's business units and its chairs are the Chief Sustainability Officer and GM Regulatory Affairs. The ESG RMF has supported the ERCC in delivery, monitoring and reporting on targets, commitments, and strategic initiatives in relation to BNZ's Climate Strategy, as well as proposing climate-related targets, policies, and metrics to the ERCC for consideration and adoption.

[7]Prior to September 2023, the ESG EC was known as the Climate Steering Group.

[8]Prior to FY24, the ESG RMF was known as the ESG Risk Management Committee. With effect from FY24, the ESG RMF will no longer be a sub-committee of the ERCC, but will become a sub-committee of ESG EC and its reporting will be provided to the ESG EC.

Executive Team

Specific responsibilities for climate-related risks and opportunities have been assigned to the following BNZ ET members:

- BNZ's CEO has delegated authority from the Board for management and operation of the day-to-day business of BNZ in accordance with BNZ's Delegation Framework. The CEO receives reporting on climate risk management in his capacity as a member of both the ESG EC and the ERCC.
- BNZ's CRO is the accountable executive for ensuring compliance with BNZ's Sustainability Risk Framework, discussed in Section 3 of this Report. The CRO provides monthly reporting (including metrics relating to climate risk) to the ERCC and quarterly to the BRCC.
- The Executive, Commercial Services and Responsible Business, is the accountable executive for:
  - » designing and overseeing sustainability policies and practices including BNZ's ESG commitments
  - » management approval and implementation of BNZ's ESG governance, reporting and escalation processes including climate-related disclosures
  - » the development of climate risk assessments (i.e. physical and transition risk analysis) for sectors that are materially impacted by climate change.

Other ET members consider and address climate-related risks and opportunities as part of the management of their business units. This includes the development and provision of sustainable finance products to BNZ's personal and business customers, the development of BNZ strategy and business plans, the management of BNZ's operational and value chain emissions, and the development of climate-related products such as green home loans.

The ET's work in this area shapes the delivery of products and initiatives to customers and the identification of climate-related opportunities with new and existing customers. For example, some BNZ bankers have a specific focus on sustainable finance, green technology, or other climate-related initiatives which may be relevant to our customers, and others work with customers to consider their readiness to manage climate-related risks and opportunities within their own businesses and operating environments.

Periodic reporting from ET members and relevant sub-committees is provided to ERCC, ESG EC, and/or the Board and its Committees to support the governance oversight described above. See Figure 3

Figure 3: Reporting to BNZ Board and management forums

From	To	When	What
Accountable Executives	Board	Quarterly (by rotation)	Business unit updates (verbal for emerging risks)
Accountable Executive	Board Audit Committee	Annually	Climate Report
Chief Risk Officer	Board and Board Risk and Compliance Committee	Quarterly	CRO Report (including RAS Dashboard)
Chief Risk Officer	ERCC	Monthly	RAS Dashboard
ESG EC	ERCC	Monthly	Minutes
ESG RMF	ESG EC	Monthly	Minutes, delivery plans, and other updates

Management remuneration

BNZ's performance is assessed on achievement of financial and non-financial measures as set out in relevant ET scorecards. Scorecard measures are linked to BNZ's key strategic priorities, including risk, performance and customer and colleague outcomes. In relation to remuneration, members of the BNZ ET have performance metrics relating to, amongst other matters, achievement of the bank's strategic metrics and compliance with BNZ's RAS, which includes climate-related risks as described above. BNZ's ET members did not have specific individual performance-based metrics linked to the management of climate-related opportunities in the FY23 financial year, other than the ET member accountable for sustainability, who was accountable for the implementation of ESG governance and reporting, as described above. BNZ's ET performance metrics are reviewed and approved annually by BNZ's Board. The Board determines progress and performance outcomes against those metrics for each financial year, as part of BNZ's performance review process, following receipt of a recommendation from the relevant Board committee.

2. Strategy

2.1 Current strategy and business model

BNZ is one of New Zealand's largest banking organisations and the largest business bank in New Zealand[a], providing a broad range of banking and financial products and services to retail, business, agribusiness, corporate, and institutional clients. BNZ employs over 5,000 people in New Zealand and has 131 branches and Partners Centres across the country.

BNZ is a subsidiary of the NAB Group of companies and is governed locally by an independent Board of Directors. BNZ either adopts NAB Group climate-related policies and/or maintains corresponding local policies relevant to its operations, as discussed in Section 3, Risk Management of this Report.

The distribution of BNZ's portfolio by operating segments, geographies, and industry segments is detailed in the BNZ Disclosure Statement (DS) for the year ended 30 September 2023[b].

Our purpose is to serve customers well and help communities prosper.

2.2 Current physical and transition impacts

Climate-related risk is grouped into physical risks and transition risks.

Physical risks are risks related to the physical impacts of climate change. These can be either acute, event driven physical risks such as storm tide coastal inundation, fluvial/pluvial flooding, or chronic, longer-term shifts in climate patterns such as sea level rise inundation, drought, and increased temperatures/humidity.

Transition risks are risks related to the transition to a low-emissions, climate-resilient economy. These include risks that emerge as society and the real economy navigate emission reductions (mitigation) or adaptation requirements related to a changing climate. These changes are typically represented in four types of transition risk: policy and legal, technology, market, and reputation risks.

The section below sets out BNZ's overview of the impact climate change is already having on BNZ and its customers and how we are working towards addressing these impacts.

BNZ is working to quantify the financial consequences of the current physical and transition climate-related impacts but the limited availability of suitable methodologies and data are challenges, as discussed in Appendix B of this Report.

Current climate-related physical risk impacts

In FY23, BNZ's customers and operations were impacted by two significant weather events.

> In January 2023, unprecedented rainfall caused extensive flooding in regions across the upper North Island, with Auckland being heavily affected.

The weather caused extensive damage, with four fatalities and thousands of properties damaged, and many people displaced from their homes and businesses as a result. In February, Tropical Cyclone Gabrielle made landfall in New Zealand. The physical impacts of the cyclone were compounded due to the flooding 10 days earlier, again resulting in significant flooding, landslips, and power and network outages in many regions of New Zealand. 11 fatalities were attributed to the cyclone[9].

Customers' homes and possessions were damaged, and some were displaced from their homes. Many business customers required assistance due to the storms and others suffered damage to other assets, such as cars or business equipment. Transport networks were also severely affected in many locations including Gisborne and Hawke's Bay.

Some BNZ properties were temporarily closed or damaged, network outages were experienced and processes such as cash deliveries disrupted.

These events triggered an internal crisis management response in line with our Business Continuity Management programme, including a post-incident review to capture lessons learned and promote continuous improvement in responses to future incidents that impact BNZ or our colleagues and customers.

How did BNZ respond?

BNZ responded for customers in several ways, including the following:

- Making a targeted assistance package available to affected customers, including options for home loan customers, including reducing repayments, interest only and a home loan deferral and access to personal temporary overdrafts for customers with urgent funding needs.
- Launching a $1 billion fund to help accelerate the recovery in the aftermath of the floods and cyclone. The fund comprised:
  - A $250 million Recovery Fund, with heavily discounted interest rates for affected business customers, to meet short to medium-term financial needs, and accelerate their recovery to normal trading conditions as quickly as possible.
  - The remaining $750 million Resilience Fund was available for all New Zealand businesses to invest in their future and build back better, with a focus on resilience, growth, and sustainability.
- BNZ committed more than $50 million in interest relief to customers and provided $900,000 in cash and community grants[10].
- BNZ provided loans guaranteed under the North Island Weather Events (NIWE) Loan Guarantee Scheme, announced by the Government to support businesses affected by the weather events, provided they met certain criteria.

BNZ responded to operational impacts including:

- Identifying back-up options for processing customer payments due to reduced access to branches.
- Co-ordination across the banking industry, and with the Reserve Bank of New Zealand (RBNZ), provided for cash needs, where transport networks allowed.
- Support measures were put in place, including discretionary leave where appropriate, for BNZ colleagues who experienced damage to their homes or disruptions to power, internet, and water supply and were unable

to

[9]This description of impacts is not limited to BNZ customers.

[10]Although launched in response to the extreme weather events, access to the Recovery and Resilience Fund, interest relief and cash and community grants was not restricted only to those impacted by the floods and cyclone.

Current climate-related transition risk impacts

The table below summarises the current transition risks identified or experienced by BNZ[11].

Table 1: Current transition risk impacts

Transition risk	Description of impact
Global supply chain pressures on our customers, for example, NZ primary producers (market risk)	As net zero commitments become more widespread across different countries and industries, pressure on associated supply chains will increase. Recent examples of relevance to the New Zealand agriculture sector include Nestlé, a significant customer for New Zealand's primary industries, committing to sourcing its key ingredients through regenerative agriculture methods by future points in time, as well as a 50% emissions reduction by 2030[c]. While how these changes will impact New Zealand is yet to be made clear, this is an example of evolving global expectations that New Zealand businesses will need to be able to meet to retain their supplier contracts.
Reputational harm (reputation risk)	BNZ has carefully considered the methods it is applying for its climate risk and opportunity assessments, as well as financed emissions target setting, including by drawing on MBIE's assessment of high emitting sectors identified by ANZSIC codes, detailed risk analysis relying on the Intergovernmental Panel on Climate Change (IPCC) CMIP6 projections, Net Zero Banking Alliance target setting guidance and PCAF. Without careful assessment of which methodologies are appropriate for BNZ, there is a risk of reputational harm.
Climate-related legislation and policy change (policy and legal risk)	The need to respond to climate change risk and opportunity is driving government consultations, new legislation, policy change, and wider requirements. This brings with it uncertainty as to how banks and their customers will be affected. One example is the recent Inquiry into Climate Adaptation, opened by the Parliamentary Environment Committee, to consider options for community-led retreat and adaptation funding. This uncertainty is compounded by 2023 being an election year with a new incoming government and the possibility of further changes to new policy. BNZ will continue to monitor such change, engage with government where appropriate, and respond, as necessary.
Uncertainty and cost associated with compliance with the mandatory climate-related disclosures regime (policy and legal risk)	In October 2021, the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021 was passed, defining large registered NZ banks, among others, to be 'climate reporting entities' and requiring climate reporting in line with the Climate Standards. BNZ's first mandatory reporting period is from 1 October 2023 to 30 September 2024, with our first climate statement required to be published by the end of January 2025. The new regime brings significant uncertainty, including from regulator guidance as to how a climate reporting entity should meet the mandatory requirements and what investor expectations will be. There is a cost impact as we invest in new processes, systems, data, and upskilling our people, including purchasing climate data, hiring suitably qualified colleagues, upskilling existing colleagues, and engaging third parties, each with relevant expertise in areas such as climate modelling.

[11]This is a summary of transition risks identified or experienced during FY22 and FY23 rather than the outcome of quantified analysis.

2.3 Scenario analysis

Climate scenario analysis is a strategy and risk management tool to help entities understand the climate-related risk and opportunity to an entity's business model over time. It is a forward-looking, structured approach that considers plausible futures and the impacts to the financial resilience of the entity's business model under different temperature changes and over different time horizons.

BNZ, along with other members of the New Zealand Banking Association – Te Rangapū Pēke, has developed a common set of climate scenario narratives for the New Zealand banking sector[d]. The work includes three scenario narratives developed over four chosen time horizons that each member bank can consider when developing their own climate scenarios, as required under the Climate Standards. The development of these scenarios helps meet the XRB's guidance on sector-level scenario analysis, through banking sector alignment and comparability of climate-related scenario analysis and disclosures.

BNZ will use this work as the basis for the development of a suite of BNZ-specific scenarios, which will be used to assess the climate-related physical and transition risks and opportunities across several key portfolios during FY24 and, where relevant, explore the plausible impact on BNZ's current business model and strategic ambition.

BNZ is in the early stages of applying a customised scenario analysis methodology, as recommended by XRB guidance. This follows a qualitative process to allow for strategic thinking to inform this first scenario analysis rather than a singular focus on modelling and quantification. As required by the Climate Standards, the outputs of this work are intended to be used by BNZ to make business decisions to mitigate risks, build resilience to climate in our portfolio, and develop growth strategies that focus on the identified opportunities.

2.4 Physical and transition risk analysis approach

BNZ continues to develop the scope of its analysis of climate-related physical and transition risks as well as the potential opportunities we can leverage in our transition to a lower-carbon, climate resilient economy. The table below sets out the approach we have taken for physical and transition risk analysis in this Climate Report (see sections 2.5 and 2.6) and compares the scope with the analysis discussed in the 2022 Climate Report.

We are at an early stage of understanding climate-related impacts on BNZ, and the approach set out below does not cover all of the risks that may affect BNZ and/or its customers, nor have we yet assessed all of our risks using the same methodologies. There are significant limitations to our approach which are discussed in more detail in Appendix B.

Note, this climate modelling is distinct from the qualitative scenario analysis discussed in Section 2.3, in that scenario analysis is a broader analysis of impacts on an organisation, while the climate modelling described in this section is specific to a particular climate variable, for example, extreme coastal inundation.

For FY23, we have conducted our physical and transition risk analysis against the TCE of our Gross loans and advances to customers (being $116,615M), reduced to reflect certain data constraints:

- For our physical risk analysis, we have started with the TCE of our Gross loans and advances to customers, and excluded all loans not secured by geocoded titles (because our analysis is location dependent and therefore requires geocoded titles). This means that our physical risk analysis assessed 80% of BNZ's TCE of Gross loans and advances to customers for exposure to sea level rise and extreme coastal inundation. Physical risk analysis for fluvial and pluvial flooding is only reported in respect of two sectors (see Section 2.5).
- For our transition risk analysis, we have started with the TCE of our Gross loans and advances to customers, and excluded all loans with no industry classification (e.g. consumer lending comprised within 'Real estate – mortgage and personal lending'). This means that our transition risk analysis of sector industry emissions intensity assessed 47% of BNZ's TCE of Gross loans and advances to customers.

Industry sectors used for reporting of climate-related risks

We have generally aligned the industry sectors used for reporting of climate-related risks in this Report with the following sectors used in our financial reporting[13]:

- Accommodation, restaurants, culture, and recreation
- Agriculture - dairy
- Agriculture - non dairy
- Communications
- Construction
- Electricity, gas, and water – non power generation
- Electricity, gas, and water - power generation
- Financial, investment, and insurance
- Forestry and fishing
- Government, education, health, and community services
- Manufacturing
- Mining - coal
- Mining - other
- Oil and Gas
- Personal lending
- Property, business, and personal services
- Real estate - mortgage
- Transport and storage
- Wholesale and retail trade

Total Committed Exposure (TCE) refers to the total amount of irrevocable funding a BNZ customer can access at anytime. For example, a customer may have $1 million outstanding to the bank, but we have a TCE to the customer of $2 million, meaning an additional $1 million can be borrowed by that customer if relevant conditions are met.

[13]The presentation of certain industry sectors used in BNZ's financial statements has been modified in this Report, to address subsectors which have differing emissions profiles, or to align with the NZBA decarbonisation sector segmentation. These are: Agriculture has been split into dairy and non-dairy; Electricity, gas and water has been split into non-power and power generation; and Mining has been split into coal and other, Oil and Gas has been aggregated from a number of industries, and Related entities are not included.

Table 2: Overview of our approach to analysing climate-related physical and transition risks

	Physical risk		Transition risk	
	2022 Climate Report	**This Report**	**2022 Climate Report**	**This Report**
Type of risk	• Acute - extreme coastal inundation, • Chronic - sea level rise inundation.	• Acute - extreme coastal inundation, fluvial/pluvial flooding, • Chronic - sea level rise inundation. We are aware that there are more physical risks (such as drought and increases in windspeed and temperature) that may impact BNZ and therefore require consideration.	Emissions intensity and regional impact as a proxy for transition risk.	An initial literature review was undertaken which identified the following transition risk themes: • Policy and Legal risk • Technology risk • Market risk • Reputation risk BNZ may face other transition risks which have not been addressed in this report.
How could this impact our customers (and therefore BNZ)?	Customers may experience damage to their properties, which could impact the cost and availability of insurance and reduce property values. Physical risks may also impact productivity and profitability for customers which could affect their ability to repay loans.		Customers may have assets, business strategies, employment, and livelihoods affected by emerging regulation or changes in technology. Some industries may thrive while others are no longer viable as we transition to a low carbon, resilient economy.	
Analysis approach	We modelled physical risks using a 1.5 degree and a 4 degree temperature pathway.	We used climate model projections that show the potential exposure of physical risks under differing future temperatures. We have used three Shared Socio-economic Pathways (described in Appendix B), and four percentiles to capture a fuller range of risk exposure.	Using MBIE data from a report published in 2021[e], we modelled emissions intensity and regional impact of the transition using ANZSIC codes as a proxy to identify sensitivity to transition risk.	Using MBIE data we modelled emissions intensity and regional impact of the transition as a proxy to identify sensitivity to transition risk. Via a literature review we have explored industries sensitive to changes in emissions policies and pricing, insurance shifts, technology redundancy, market and societal preferences, and regulatory change.
Scope of analysis	In the 2022 Report, BNZ provided an overview of the possible future exposure for seven key sectors under two different climate models with an outlier percentile to capture a selected range of modelled exposure. We looked at sea level rise inundation and extreme coastal inundation.	80% of BNZ's TCE[12] of BNZ's Gross loans and advances to customers for sea level rise and extreme coastal inundation described above.	BNZ explored the emissions intensity of industry related loans for seven key sectors using the MBIE data.	47% of BNZ's TCE of BNZ's Gross loans and advances to customers described above.
Time horizons	Physical risk analysis was performed using FY21 financial data. We considered three-time horizons: • short term: 5 years, • medium term: 10 years, • long term: 30 years. Specific points in time of 2030 and 2055 were used for the physical risk analysis.	Physical risk analysis was performed using FY22 and FY23 financial data, as follows: • short term: 2030 (0 to 7 years), • medium term: 2040 (7 to 17 years), • long term: 2050 (17 to 27 years). These timeframes align broadly with those used for the decarbonisation targets (Section 4.4) and to lending timeframes for different products provided by BNZ to its customers (such as a home loan). This report presents analysis as at both 2030 and 2050.	Transition risk analysis was performed using FY21 financial data.	Transition risk analysis was performed using FY22 and FY23 financial data.

[12]TCE refers to the total amount of irrevocable funding a BNZ customer can access at any time. For example, a customer may have $1 million outstanding to the bank, but we have a TCE to the customer of $2 million, meaning an additional $1 million can be borrowed by that customer if relevant conditions are met.

2.5 Physical risk analysis approach

This Report discloses the estimated financial impacts of sea level rise inundation, extreme coastal inundation, and pluvial and fluvial flooding on loans secured by geocoded properties in BNZ's TCE of Gross loans and advances to customers. Our methodology including important limitations and disclaimers is in Appendix B. Although in some cases we discuss the New Zealand wide impacts of various events, figures and graphs in this Report relate to BNZ's own portfolio and customers.

BNZ has used climate change models to support its assessment of climate-related risks and opportunities. Climate models use sound scientific principles to show how greenhouse gas emissions (GHG) will drive physical environmental changes. The extent of underlying GHG emissions is based on a range of socio-economic futures, known as Shared Socioeconomic Pathways (SSP). SSPs show a range of potential global warming impacts over the coming century (see Appendix B, Table 17). The three different climate models – described in Appendix B – are:

SSP1 - 1.9	Sustainability - Taking the Green Road
SSP2 - 4.5	Middle of the Road
SSP5 - 8.5	Fossil-fuelled Development - Taking the Highway

We assessed the anticipated impacts of climate change for three physical risks:

Sea level rise inundation

Sea level rise inundation refers to permanent flooding of low-lying coastal land due to a climate change-induced increase in the average height of the sea where it meets the land. This risk considers regional variations in sea level change and projected vertical land movement under different climate models.

Extreme coastal inundation

Coastal inundation refers to temporary flooding of land along coastlines and estuaries due to the combination of a storm tide event, wind and pressure changes, and local mean sea level rise inundation (including vertical land movement). For extreme coastal inundation, there is an estimated 1-in-100-year chance of coastal inundation occurring on any customer property (1% AEP – refer to the explanation of AEP adjacent).

Fluvial/pluvial flooding

Fluvial and pluvial flooding refers to temporary flooding caused by rivers overflowing (fluvial) and an extreme rainfall event (pluvial). For this risk, there is an estimated 1-in-100-year chance of flooding occurring on any customer property (1% AEP – refer to the explanation below). The flood model integrates the digital elevation of the land and a storm profile combined with surface roughness and infiltration to provide the potential flood risk for different climate models.

These physical risks are discussed in New Zealand climate risk literature as they have the ability to cause damage to properties securing loans to customers and result in cascading transition risks (e.g. insurance retreat, reduced property value prices, local government land use restrictions). These physical risks were also chosen as they broadly align with risk analysis BNZ has conducted for stress testing.

What is AEP?

Annual exceedance probability (AEP) is the probability that a given flood (i.e. coastal, or fluvial or pluvial) will be exceeded on a particular property in any one year. For example, 1% AEP means conditions that are estimated to have a 1-in-100 chance of occurring on a particular property in any given year (and an average likelihood of occurring once every 100 years). In the case of coastal flooding, these conditions are likely to happen during a storm event with large tides, waves, and storm surge.

Possible future exposure from sea level rise inundation

Approximately 65% of New Zealanders live within 5km of the coast[f]. To better understand the exposure of its customers to sea level rise inundation, BNZ commissioned sea level modelling to show properties associated with loans secured by geocoded titles that are expected to be affected by sea level rise inundation in 2030, 2040 and 2050, depending on which climate model is used. For simplicity our reporting focuses on 2030 and 2050.

In all cases, the outlier model risk is reported, i.e. the 99th percentile outlier risk. BNZ used a parcel approach, for example, affected properties are those where sea level rise inundation could impact any part of the property within the plot boundary and not necessarily the building footprint. The modelling included local projections of vertical land movement that may exacerbate or lessen the effects of sea level rise inundation.

The results are shown in Table 3. Sea level rise inundation is a chronic physical risk representing longer-term shifts in climate patterns. This explains why the projected exposure is the same for all climate models in 2030. Although the projected TCE exposed to sea level rise inundation by 2050 is low (1.03% of TCE even under SSP5-8.5, Fossil-fuelled Development – Taking the Highway), the inundation and, therefore, potential property impact is permanent compared to coastal inundation which has a temporary exposure.

Several risks for New Zealand banks, including BNZ, result from exposure to sea level rise inundation. These include potential damage to the underlying property and increased cost for the customer, affecting their ability to service loans. The following sector-specific results for BNZ have been displayed for the SSP5-8.5 climate model, Fossil-fuelled Development - Taking the Highway.

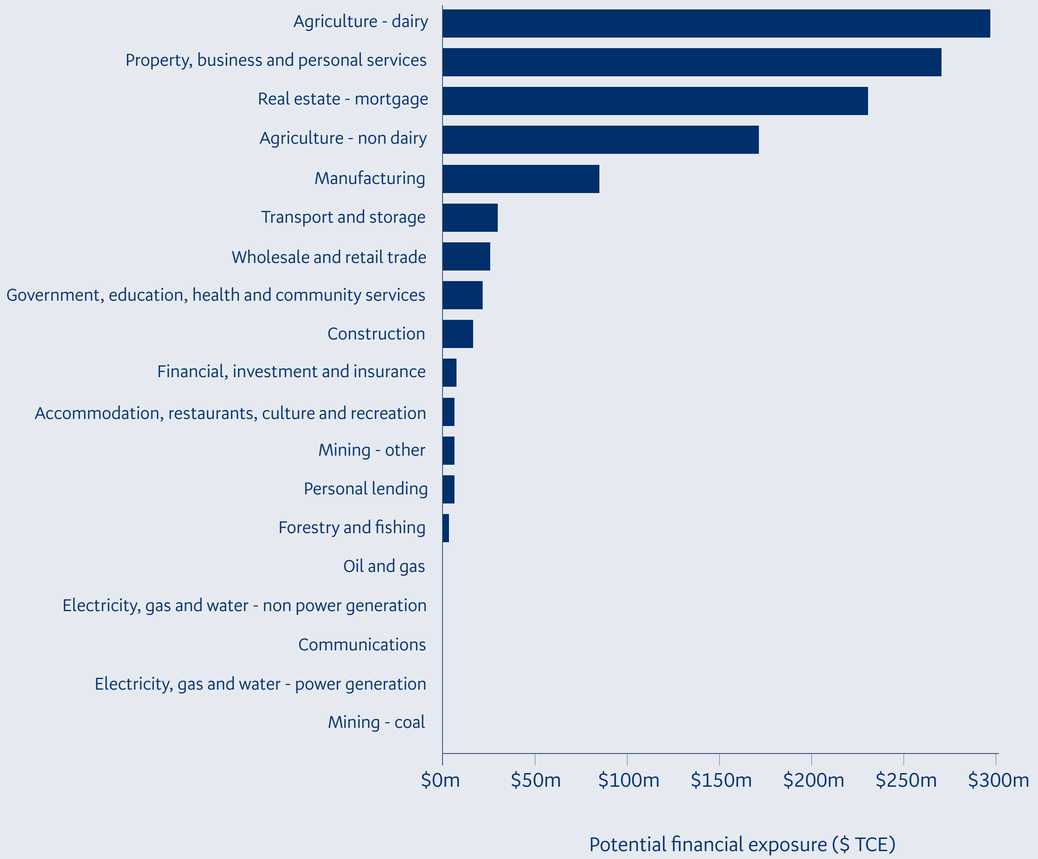
In 2050, the highest financial exposure to sea level rise inundation is for the Agriculture - dairy sector which represents $291M in TCE (Figure 4). Agriculture – non dairy had the fourth highest financial exposure. Other sectors with greater financial exposure to sea level rise inundation are Property, business, and personal services estimated to be $265M in TCE and Real estate – mortgage estimated to be $226M in TCE (Figure 4).

Table 3: BNZ's exposure to sea level rise inundation under three climate models

Climate model	2030	2050
SSP1-1.9	$678M TCE (0.73%)	$867M TCE (0.93%)
SSP2-4.5	$678M TCE (0.73%)	$930M TCE (1.00%)
SSP5-8.5	$678M TCE (0.73%)	$959M TCE (1.03%)

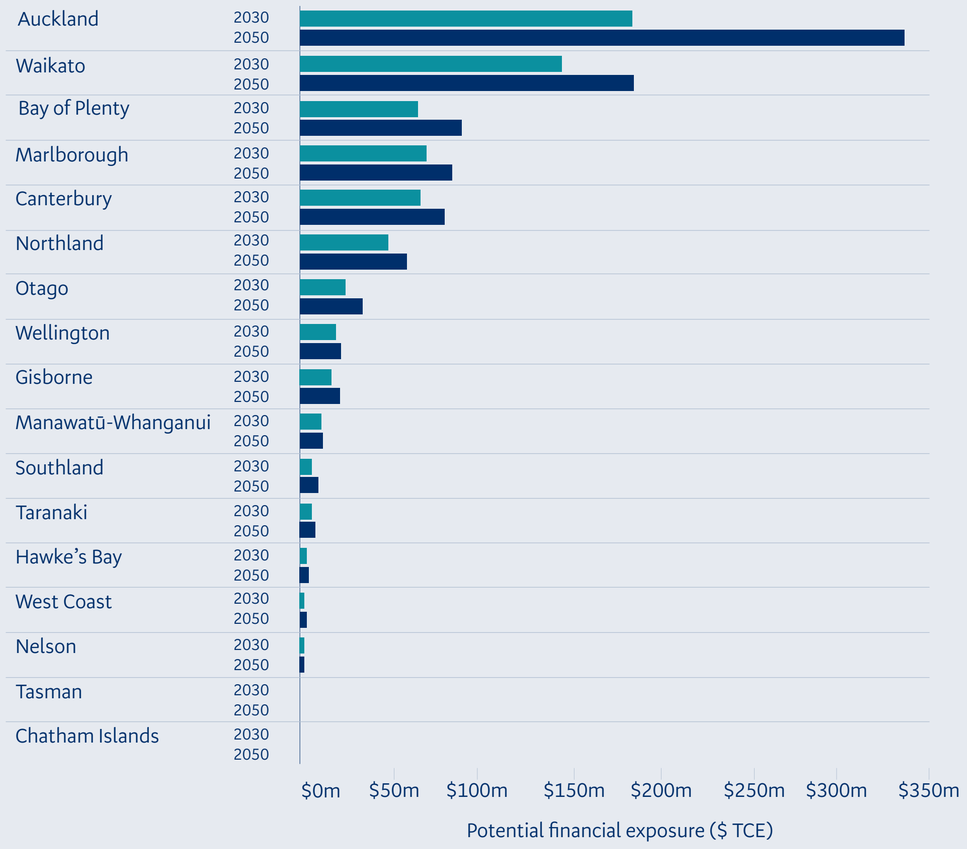
The 99th percentile of the climate model was selected, representing an outlier model risk. A secured property is exposed when the mean inundation depth of a parcel is greater than zero metres. The percentage represents the proportion of the TCE from BNZ's loans secured by geocoded properties.

Figure 4: Potential financial exposure (TCE) to sea level rise inundation under SSP5-8.5, 99th percentile for each sector in 2050



SSP5-8.5 climate model with a 99th percentile was selected, representing an outlier model risk. The potential financial exposure represents the TCE of exposed properties for BNZ's loans secured by geocoded properties (being 80% of BNZ's TCE of Gross loans and advances to customers).

Figure 5: Potential financial exposure (TCE) of secured properties exposed to sea level rise inundation for each region in 2030 and 2050



SSP5-8.5 climate model with a 99th percentile was selected, representing an outlier model risk. A secured property is exposed when the mean inundation depth of a parcel is greater than zero metres. The potential financial exposure represents the TCE of exposed properties for BNZ's loans secured by geocoded properties (being 80% of BNZ's TCE of Gross loans and advances to customers).

These regional results have been displayed for the SSP5-8.5 climate model, Fossil-fuelled Development - Taking the Highway.

Figure 5 shows that from a geographic perspective, modelling identifies the Auckland region as having the highest potential financial exposure for BNZ and its customers to sea level rise inundation in 2030 and 2050. The Waikato region has the second highest potential financial exposure. For such areas, sea level rise inundation could shift the freshwater-saltwater position of rivers, and cause saltwater intrusion of groundwater bores.

Possible future exposure from extreme coastal inundation

BNZ has explored an extreme coastal inundation scenario which considers a 1% AEP risk of coastal flooding occurring on any customer property (see definition above on page 16). The risk of extreme coastal inundation varies across the country and is determined by a range of factors including mean sea level, wave setup, exposure to prevailing winds, local bathymetry (water depth), and vertical land movement.

The results for extreme coastal inundation in 2030 (below) show a lower financial exposure for SSP5-8.5 compared to the other two climate models. These differences are linked to the global mean sea level change (embedded in the model) which is lower for the higher emissions pathway (SSP5-8.5) up to around 2030. This shows that regardless of the climate model, there is exposure to extreme coastal inundation in the future.

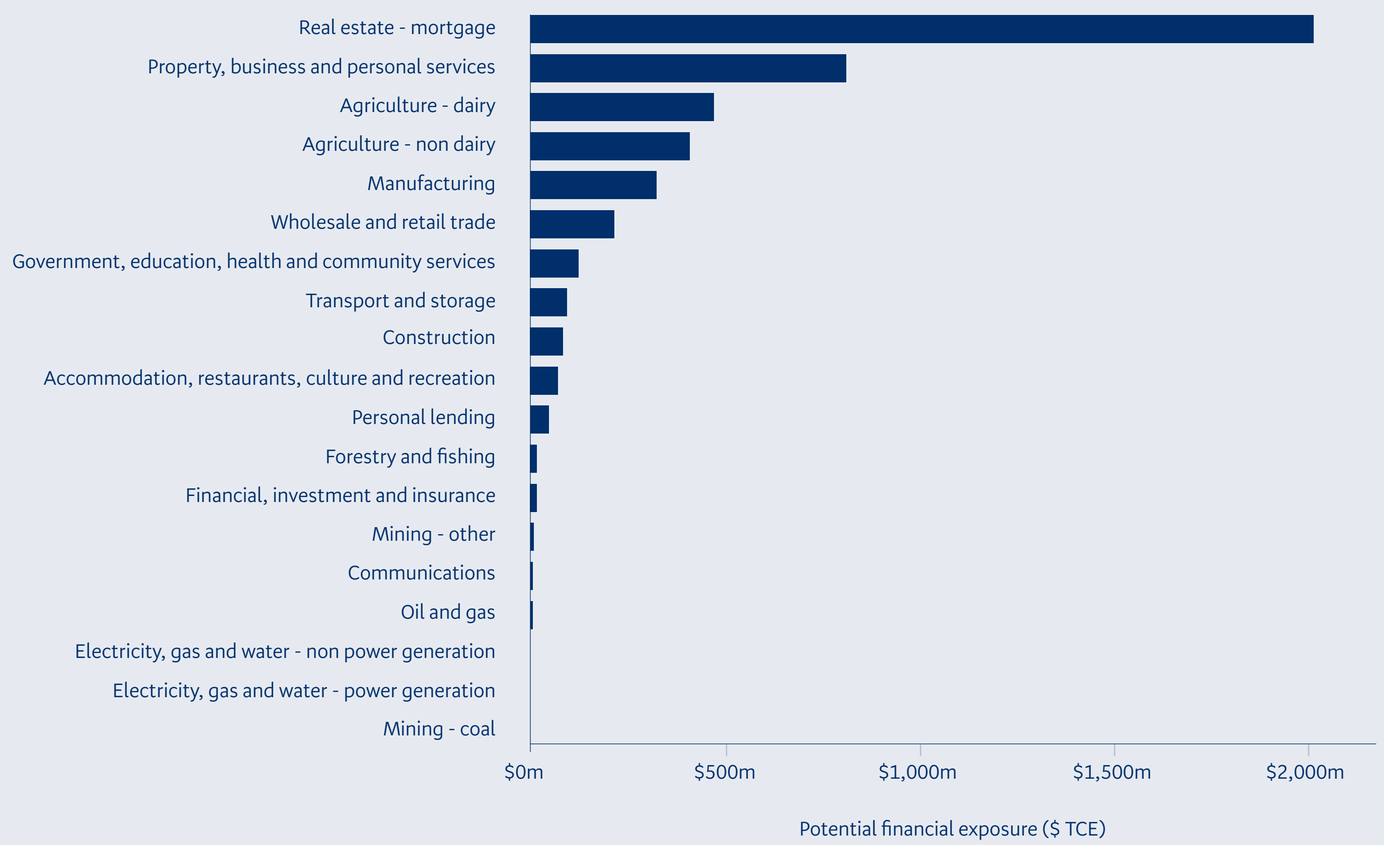
It should be noted that climate models have a complex array of socio-economic and biophysical inputs. The climate models have similar exposure outputs until 2040. Any results where a 'lower' SSP has a higher level of exposure (TCE) are due to the individual model parameters. The differences in exposure become more notable as time progresses as the extent of sea level rise inundation becomes more prominent and the energy in underlying storm surge modeling is exacerbated. These findings support our understanding that climate models are not linear and should also be considered independently of each other to show different exposures to extreme coastal inundation over time.

Table 4: BNZ's exposure to extreme coastal inundation under three climate models

Climate model	2030	2050
SSP1-1.9	$3,284M TCE (3.52%)	$3,829M TCE (4.10%)
SSP2-4.5	$3,347M TCE (3.59%)	$3,913M TCE (4.19%)
SSP5-8.5	$3,283M TCE (3.52%)	$4,078M TCE (4.37%)

The 99th percentile of the climate model was selected, representing an outlier model risk. A secured property is exposed when the mean inundation depth of a parcel of land is greater than zero metres. The percentage represents the proportion of the TCE from BNZ's loans secured by geocoded properties.

Figure 6: Potential financial exposure (TCE) to extreme coastal inundation for each sector for 2050



SSP5-8.5 climate model with a 99th percentile was selected, representing an outlier model risk. The potential financial exposure represents the TCE relating to lending on exposed properties for BNZ's loans secured by geocoded properties (being 80% of BNZ's TCE of Gross loans and advances to customers).

Extreme coastal inundation – sector specific insights

Figure 6 shows BNZ's potential financial exposure to extreme coastal inundation for 2050.

In 2050, the Real estate – mortgage sector is projected to represent the highest financial exposure with $2,085M in TCE. The second highest financial exposure is in the Property, business, and personal services sector with $838M in TCE. Coastal inundation can result in a range of challenges for BNZ's customers including damage to homes, assets and lifeline utilities, and disruption to transport routes. These physical risks can cascade into transition risks via insurance affordability and availability, and, in worst case scenarios, the potential need for planned retreat.

Figure 6 also shows that in 2050, there is $487M in TCE potentially exposed to extreme coastal inundation in the Agriculture – dairy sector. Similarly, there is $422M in TCE potentially exposed to extreme coastal inundation in the Agriculture – non dairy sector. The results may capture agricultural properties where a small amount of non-productive land is impacted, although this hazard may still impact on other attributes e.g. transport networks, and environmental performance. The current methodology does not enable consideration of site-specific elements such as these. The OECD acknowledge that the risk of coastal flooding may "impose higher overall economic and ecological losses, and recovery costs" on the agriculture sector and the New Zealand government[9]. For example, coastal inundation has already affected agricultural locations across New Zealand with saline and sand inundation of farmland causing damage and impacting productivity.

The sector-specific results are for the SSP5-8.5 climate model, Fossil-fuelled Development – Taking the Highway.

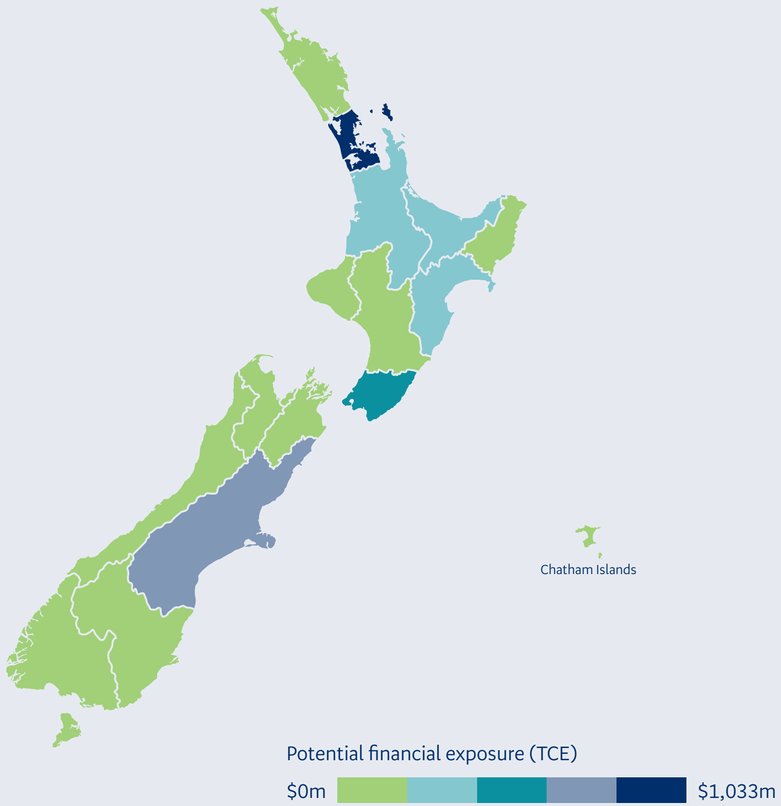
Extreme coastal inundation – regional insights

The analysis identified two regions with greatest financial exposure to extreme coastal inundation (Figure 7).

In 2050, the Auckland region is projected to have the highest potentially exposed TCE with $1,033M. The other region is Canterbury, with $787M in TCE potentially exposed to extreme coastal inundation in 2050.

The following regional results are displayed for the SSP5-8.5 climate model, Fossil-fuelled Development - Taking the Highway.

Figure 7: Potential financial exposure (TCE) to extreme coastal inundation for each region in 2050



SSP5-8.5 climate model with a 99th percentile was selected, representing an outlier model risk. The potential financial exposure represents the TCE of exposed properties for BNZ's loans secured by geocoded titles (being 80% of BNZ's TCE of Gross loans and advances to customers).

Possible future exposure from fluvial and pluvial flooding

Flood risk is a significant natural hazard for New Zealand. Recent events such as the Auckland Anniversary Weekend floods and Cyclone Gabrielle highlight the extent of the socio-economic impacts that can last well beyond the duration of a flooding event.

Ongoing development in exposed areas is likely to magnify the challenges. For example, in Auckland over 3,000 properties have obtained building consents in flood prone areas since 2018[h]. Increased exposure to flooding combined with heightened flood intensity and frequency would place a considerable strain on New Zealand's built environment.

Literature review suggests that the flood inundation depth above the first finished floor level is important and correlated with total building damage. For this reason, our reporting focuses on a flood depth above 0.5m (0.52m is noted in a NIWA survey[i] as the average floor height above ground for residential buildings built after 1980).

The results below are for BNZ's loans secured by geocoded properties and have been displayed for the SSP5-8.5 climate model, Fossil-fuelled Development – Taking the Highway in 2050. BNZ used a parcel approach for its flood analysis which included flood depth banding to determine various levels of exposure. A key limitation is that modeling was performed using the area of the parcel of land which may not reflect the actual building footprint on the property. The assumption is that if the parcel is exposed, then the building will also be exposed, however this will not always be the case, depending on where that property is located on the land parcel. The results below are for the Real estate – mortgage and Property, business, and personal services sectors only.

Possible future exposure from fluvial/ pluvial flooding - Real estate – mortgage sector

Flooding of residential properties can lead to direct and indirect impacts for BNZ's customers. For this reason, BNZ has taken a more focused approach to analyse the exposure of its customers in the Real estate – mortgage sector to fluvial/pluvial flooding.

For the Real estate – mortgage sector, the results of SSP5-8.5, Fossil-fuelled Development – Taking the Highway modelling for a flood depth below 0.5m are in Table 5. Understanding such impacts is important because flood events could result in temporary and permanent displacement of people, impacting on the financial security, and health and wellbeing of the residents. If the flooding is over the floor level (above 0.5m per Table 5), then significant damage can occur to homes and other buildings and, under certain conditions, result in a complete write off of the asset. Without adequate clean up, mould can emerge and pose health risks for residents.

Possible future exposure from fluvial/ pluvial flooding - Real estate - mortgage sector regional insights

Understanding geographic spread of risk is important as it helps banks to explore concentration risk. The following results present the potential exposure of properties in the Real estate – mortgage sector to more than 0.5m of flood depth under a SSP5-8.5, Fossil-fuelled Development – Taking the Highway climate model. Under these parameters, four regions are identified as having greater exposure to fluvial/ pluvial flooding.

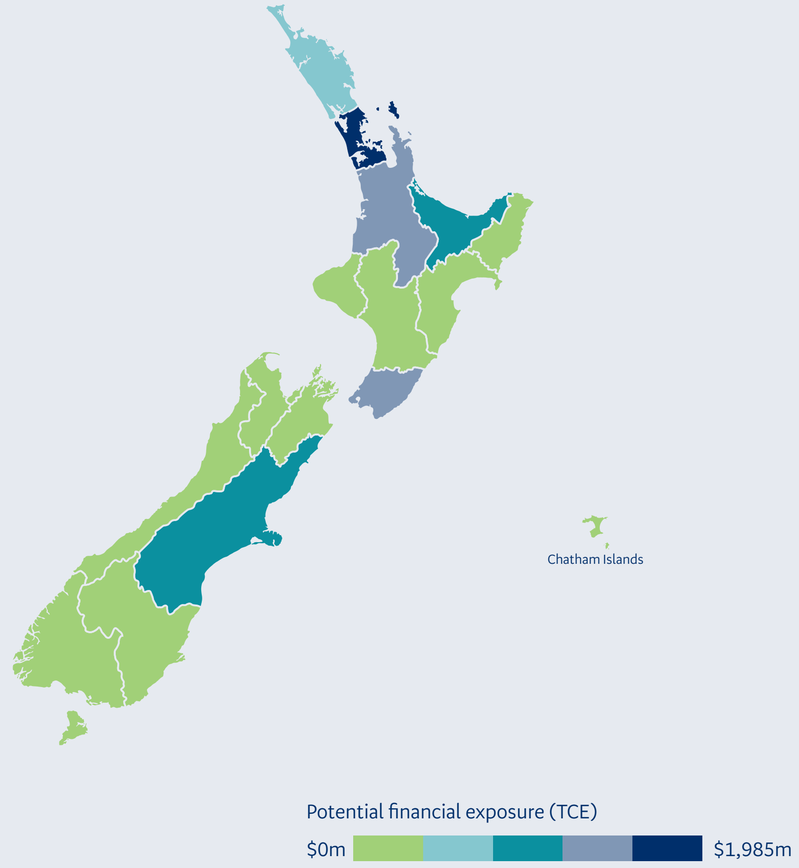
In 2050, the Auckland region is projected to have the highest financial exposure, $1,985M in TCE (Figure 8). The second highest exposed is the Wellington region, with $1,516M in TCE potentially exposed to fluvial/pluvial flooding. The next three regions are Waikato with $1,214M in TCE, Bay of Plenty with $877M in TCE, and Canterbury with $841M in TCE potentially exposed in 2050.

Table 5: Exposure of Real-estate – mortgage sector to fluvial/pluvial flooding below and above 0.5m flood depth

Flood depth	2030	2050
0m (Not exposed)	57.8% secured properties $39,220M TCE	53.8% secured properties $36,968M TCE
0.5m and below	30.8% secured properties $18,207M TCE	32.0% secured properties $18,889M TCE
Above 0.5m depth	11.4% secured properties $7,085M TCE	14.2% secured properties $8,655M TCE
Total	100.0% secured properties $64,512M TCE	100.0% secured properties $64,512M TCE

SSP5-8.5 climate model with a 99th percentile was selected, representing an outlier model risk. The exposure is identified where the mean inundation depth of a parcel is greater than zero metres. The percentage represents the proportion of properties from BNZ's loans secured by geocoded properties in the Real estate – mortgage sector. The percentage and TCE are lower for flood depths above 0.5m because fewer properties are affected by the higher flood depth.

Figure 8: Potential financial exposure (TCE) of the Real-estate – mortgage sector to fluvial/pluvial flooding above 0.5m inundation depth for each region in 2050



SSP5-8.5 climate model with a 99th percentile was selected, representing an outlier model risk. The exposure is identified where the mean inundation depth of a parcel of land is greater than zero metres.

Possible future exposure from fluvial/ pluvial flooding - Property, business and personal services sector

BNZ has also explored the exposure of its customers in the Property, business and personal services sector to fluvial/pluvial flooding. A large proportion of this sector is comprised of industries which are part of commercial real estate.

As well as structural damage and risk to contents, business properties can differ from residential in that there can be financial impacts due to lack of customer access to the buildings, or damage to key building infrastructure. For example, the Auckland Anniversary Weekend floods in 2023 resulted in damage to lifts in Auckland high rises, including apartment buildings, hotels, hospitals, and malls.

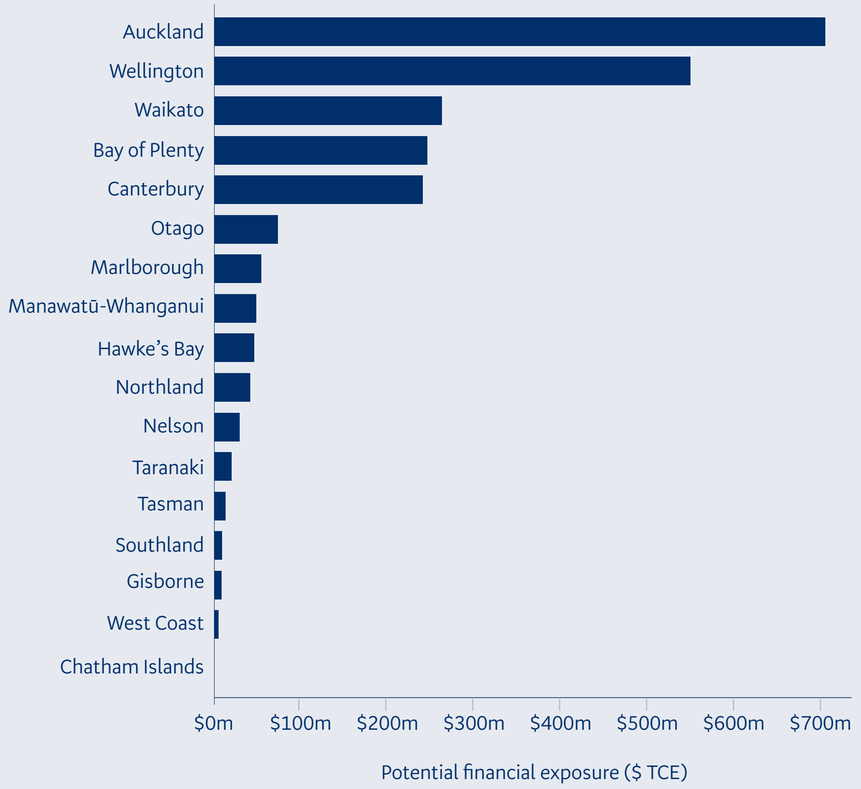
Figure 9 shows the results of SSP5-8.5, Fossil-fuelled Development – Taking the Highway modelling for a flood depth above 0.5m for the Property, business and personal services sector. Fluvial/pluvial flood events, particularly those at higher flood depths, could result in widespread disruption to specific sectors (e.g. retail and tourism). Under these parameters, there are two regions with the highest financial exposure to fluvial/pluvial flooding. In 2050, the projected financial exposure in the Auckland region represents $703M in TCE. The Wellington region has the second highest projected financial exposure at $548M in TCE from secured properties in 2050. These results are consistent with a study by NIWA[i] which found that Auckland has the highest commercial building exposure to fluvial/ pluvial flooding.

Table 6: Exposure of Property, business and personal services sector to fluvial/pluvial flooding below and above 0.5m flood depth

Flood depth	2030	2050
0m (Not exposed)	44.7% secured properties $4,271M TCE	40.9% secured properties $3,886M TCE
0.5m and below	39.7% secured properties $4,995M TCE	39.2% secured properties $5,044M TCE
Above 0.5m depth	15.6% secured properties $1,990M TCE	19.9% secured properties $2,347M TCE
Total	100.0% secured properties $11,256M TCE	100.0% secured properties $11,256M TCE

SSP5-8.5 climate model with a 99th percentile was selected, representing an outlier model risk. The exposure is identified where the mean inundation depth of a parcel is greater than zero metres. The percentage represents the proportion of properties from BNZ's loans secured by geocoded properties in the Property, business and personal services sector. The percentage and TCE are lower for flood depths greater than 0.5m because fewer properties are affected by the higher flood depth.

Figure 9: Potential financial exposure (TCE) of the Property, business and personal services sector to fluvial/pluvial flooding above 0.5m inundation depth for each region in 2050



SSP5-8.5 climate model with a 99th percentile was selected, representing an outlier model risk. The potential financial exposure represents the TCE of exposed properties for BNZ's loans secured by geocoded properties in the Property, business and personal services sector.

Anticipated impacts of physical risks for customers in each sector

As well as undertaking climate modelling for selected hazards, BNZ has reviewed academic and non-academic literature on climate-related physical risks, including the information referenced in Appendix H of this Report.

Table 7 provides general examples of the key impacts that may affect BNZ customers. Consequently, this is an indicator of potential credit risk to BNZ. Impacts on customers' assets may flow through to their ability to pay back lending provided by BNZ and damage to the underlying property securing our loans may result in reduced value of the asset used as security for that lending. Impacts of customer exposure and vulnerability could affect BNZ's overarching credit, liquidity, reputation, and financial return risk. For some risks, the impacts may be managed by customers via insurance products or, where relevant, adaptation actions.

Table 7: Examples of impacts of physical risks for customers in each sector

Sector	Examples of impacts of physical risk for customers
Accommodation, restaurants, culture, and recreation	• Changes to the natural environment (e.g. loss of beaches, lack of snow, or land slips). • Impacts to restaurant supply chains where domestic and international suppliers are affected. • Increased event cancellations due to extreme weather events.
Agriculture: dairy	• Water security for some areas affected by drought. • Heat stress for dairy cattle which may lead to financial impacts associated with reduced milk productivity, increased animal mortality, and decreased animal fertility rates.
Agriculture: non-dairy	• Changes to the quality (size, shape, taste) of horticulture crops. • Increased likelihood of years where harvest/crop production is wiped out due to extreme weather events. • Changes to the distribution or prevalence of invasive species and diseases.
Communications	• Disruption to telecommunications via exposure to extreme weather events, including damage to assets. • Increased cooling requirements of data centres. • Exposure of postal and courier services to transport related risks (see Transport and storage).
Construction	• Accelerated deterioration of building products and materials due to heat stress, hail impacts, cycling, corrosion and fading which results in increased maintenance, replacements, and repairs. • Increase in construction programmes duration and costs due to weather-related delays or damage.
Electricity, gas, and water – non power generation	• Risk of supply interruptions due to asset failure. • Risk of assets degrading faster than anticipated.

Table cont. next page

Table 7: Examples of impacts of physical risks for customers in each sector (continued)

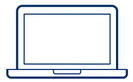
Sector	Examples of impacts of physical risk for customers
Electricity, gas, and water – power generation	• Damage to assets from extreme weather events and coastal hazards. • Reduced hydro performance, losses in generation and transmission efficiency due to extreme temperatures, and changes in timing and nature of peak loads.
Financial, investment and insurance	• Risk that counterparties may be affected by climate-related physical risk. • Increased claims made on insurers due to physical risks.
Forestry and fishing	• Reduced fisheries productivity due to changes in ocean chemistry, temperature, stratification, currents, and biodiversity • Increase in the frequency and intensity of extreme weather events (e.g. droughts, floods, storms) can damage forests, reduce productivity, and increase the risk of wildfires and erosion.
Government, education, health, and community services	• Disruption to services due to extreme weather events impacting infrastructure. • Increased demand for health services because of extreme weather events.
Manufacturing	• Extreme weather events can damage customer assets. • Increased incidence and occurrence of extreme weather events can lead to disruptions in the value chain of the manufacturing sector, e.g via blockages in transport networks, electricity outages, impacts on resource extraction and damage to key equipment or assets of organisations in the value chain.
Mining – coal	• Disruption to assets, infrastructure, and transport corridors from extreme weather events. • Heavy rains over shorter periods could cause flooding of sites.
Mining – other	As row above

Sector	Examples of impacts of physical risk for customers
Oil and Gas	• Large-scale disasters in this sector can have considerable environmental and human health consequences. With the projected frequency and/or intensity of extreme weather events, the risk of these types of events occurring increases. • Oil and gas extraction points can be affected by severe weather impacting on construction, offshore production, onshore processing, and decommission phases.
Personal lending	• Damage to underlying collateral or customer employment arising from extreme weather events. • Increased natural disasters may impact customers' ability to repay loans.
Property, business, and personal services	• Buildings in this sector (e.g. Commercial Real Estate) are exposed to the impacts described in the Real estate-mortgage sector (see below). • Damage to assets and business interruption as a result of increased incidence and /or magnitude of extreme weather events.
Real estate - mortgage	• Increased exposure to storm tides may result in damage to buildings. • Buildings are sensitive to drought-induced soil movements, which can cause certain types of soil to dry and shrink as buildings shift and subside. This can result in structural damages to foundations and cracked walls and ceilings. • Flooding of below ground levels (e.g. car parks), and critical building infrastructure (e.g. lift mechanisms).
Transport and storage	• Increased frequency and intensity of extreme weather events can result in disruptions, road closures, landslides, bridge failures, and washouts. • Global disruptions including to international distribution networks, e.g. shipping networks.
Wholesale and retail trade	• Damage to assets and business interruption due to increased incidence and /or magnitude of extreme weather events. • Disruption to global and local supply chains due to extreme weather and changing weather patterns (e.g. reduction of ships passing through the Panama Canal).

2.6 Transition risk analysis

BNZ recognises that transitioning to a low carbon, resilient economy presents a number of risks, including those examples described in the table below.

Table 8: Description of transition risk types

	Policy and Legal risk	Policy actions can serve two purposes: to constrain activities that contribute to the adverse effects of climate change, or to promote adaptation to climate change. BNZ's risk associated with, and the financial impact from, policy changes depends on the nature and timing of the policy change. Examples of climate-related policy actions that may bring about regulatory risk include carbon-pricing mechanisms, land use planning, and lack of policy certainty. Climate-related legal risk is increasing globally. Reasons for such litigation include the failure of organisations to mitigate the impacts of climate change, failure to adapt to climate change, and the insufficiency of disclosure around material financial risks. Legal risk can also arise from insufficient disclosure of material financial risk, litigation associated with enabling emissions, and shareholder action.
	Technology risk	Organisations can be significantly impacted by technology improvements or innovations that support the transition to lower-carbon, energy-efficient systems. This technology risk emerges when new technology displaces old systems or disrupts parts of the existing economic system. However, the timing of future technology development and deployment is an uncertainty in assessing technology risk. Examples of technology risk include market disruption and unsuccessful investment in new technologies.
	Market risk	The ways in which markets could be affected by climate change are diverse and complex. However, one mechanism is shifts in supply and demand for certain commodities, products, and services as climate-related risks and opportunities are increasingly considered. Some of these risks include changes in consumer behaviour, uncertainty through market signals and increased cost of raw materials.
	Reputation risk	An organisation's contribution to or detraction from the transition to a lower-carbon economy may expose them to reputational risk if it changes their customers' or community perceptions of the organisation. Some examples of reputational risk include lack of targets, misaligned targets, or unexplained reasons for not meeting stated targets, perceived or actual support for carbon intensive industries, or perceived neglect of environmental systems.

High emissions-intensive industries

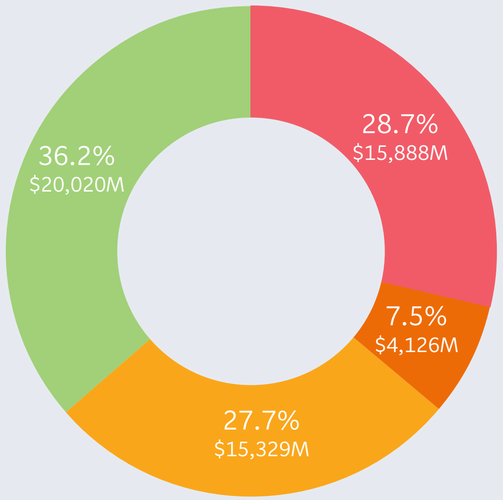
In 2021, MBIE analysed and categorised New Zealand's industries into High, Medium High, Medium, and Low carbon intensity[14, e]. This analysis assumes that high emission intensive industries are more likely to be exposed to transition risks, such as sensitivity to carbon price or regulatory change, than low emission intensive industries.

Our analysis shows that 28.7% of BNZ's industry-related loans are categorised with a 'High' emissions intensity which represents $15,888M in TCE (Figure 10). The potential financial exposure is lower for 'Medium High' emissions-intensive industries which comprise $4,126M in TCE (7.5%).

The distribution of emissions-intensity across BNZ's industry related loans is shown adjacent. There are ten industry sectors with 'High' emissions-intensive industries. The highest potential financial exposure from these sectors is in the Agriculture – dairy sector which represents $6,973M in TCE (Figure 11). The Agriculture – non dairy sector is second with $4,483M in TCE potentially exposed to 'High' emissions-intensive industries and another $2,894M in TCE from industries with a 'Medium High' emissions intensity. 'High' emissions-intensive industries were also identified in the Manufacturing sector ($1,700M in TCE) and the Transport and storage sector ($1,124M in TCE). Other sectors with 'High' emissions intensity include Electricity, gas, and water-power generation, Oil and Gas, Wholesale and retail trade, Electricity, gas, and water - non power generation, Mining – coal, and Mining – other.

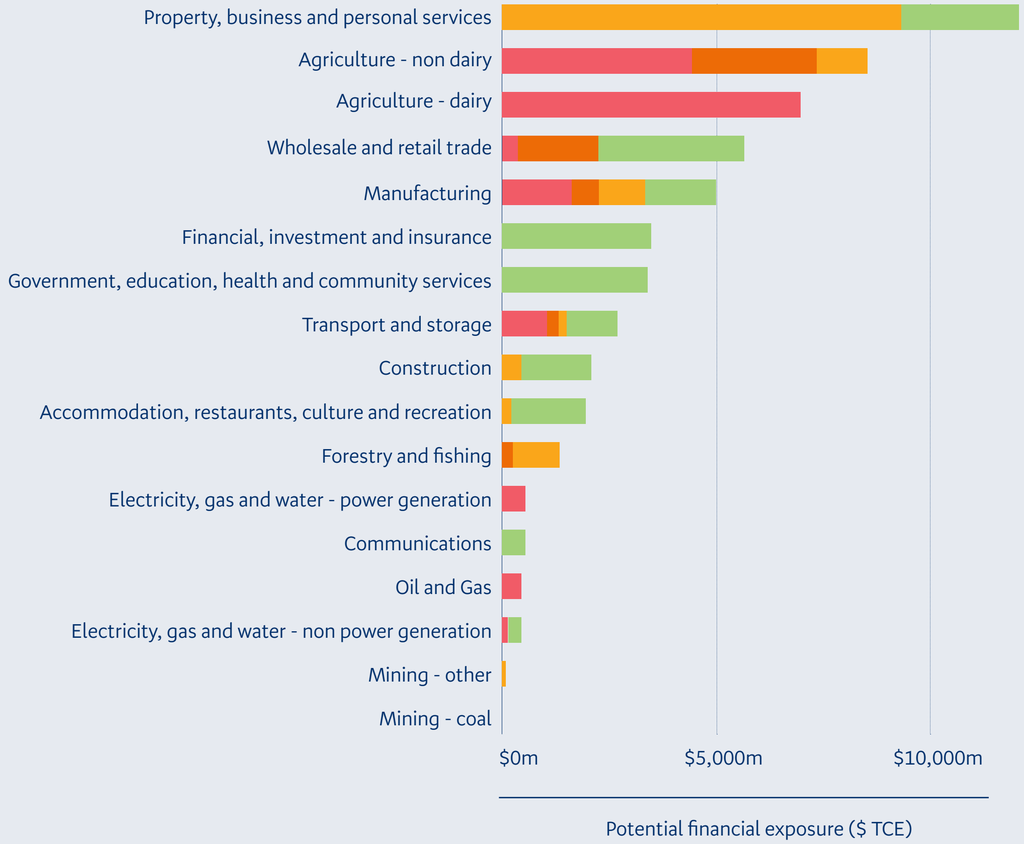
[14]Although the MBIE report was published in 2021, the underlying emissions intensity categories used in it are from 2015, which represents a limitation of our transition risk methodology. Further limitations are identified in Appendix B.

Figure 10: FY23 potential financial exposure (TCE) for BNZ's industry-related loans by each emissions intensity



The potential financial exposure represents the TCE of BNZ's industry-related loans (47% of BNZ's TCE of Gross loans and advances to customers).

Figure 11: FY23 potential financial exposure (TCE) for BNZ's industry-related loans by sector for each emissions intensity



The potential financial exposure represents the TCE of industry-related loans (47% of BNZ's TCE of Gross loans and advances to customers). Although not visible, Mining- other and Mining - coal have 'High' emissions intensity industries.

As the Agriculture – dairy and Agriculture – non dairy sectors have the greatest potential financial exposure from 'High' emissions-intensive industries, BNZ also explored the distribution of these industry sectors by region.

The results (Table 9) show that the Waikato region has the highest financial exposure for Agriculture – dairy industries with 'High' emissions intensity, while the second highest is the Canterbury region. Other regions sensitive to transition risk for the Agriculture – dairy sector include Southland, Taranaki, and Manawatū-Whanganui regions. For the Agriculture – non-dairy sector, the Manawatū-Whanganui region was identified as having the greatest financial exposure from 'High' emissions-intensive industries, followed by the Waikato region. It should be noted that, for this regional analysis, the financial exposures analysed only capture BNZ's industry-related loans that are secured by geocoded properties. Some industry-related loans will be unsecured or secured by assets other than property.

Table 9: FY23 Potential financial exposure (TCE) of BNZ's high emissions-intensive industries in Agriculture – dairy and Agriculture – non dairy sectors for each region

	Agriculture - dairy	Agriculture - non dairy
Total	$6,975m	$4,841m
Auckland Region	$45m	$48m
Bay of Plenty Region	$323m	$56m
Canterbury Region	$1,449m	$811m
Gisborne Region	$7m	$144m
Hawke's Bay Region	$128m	$449m
Manawatū-Whanganui Region	$752m	$1,214m
Marlborough Region	$5m	$21m
Northland Region	$98m	$66m
Otago Region	$299m	$238m
Southland Region	$599m	$381m
Taranaki Region	$620m	$196m
Tasman Region	$20m	$12m
Waikato Region	$2,296m	$1,012m
Wellington Region	$136m	$179m
West Coast Region	$198m	$13m

The potential financial exposure represents the TCE of BNZ's industry-related loans secured by geocoded titles. Chatham Islands data not presented to ensure customer confidentiality.

$0m $2,300m

Anticipated impacts of transition risks

BNZ has reviewed both academic and non-academic literature on climate-related transition risks which provides a general example of the key impacts that may affect customers.

Table 10: Examples of impacts of transition risks for customers in each sector

Sector	Examples of impacts of transition risk for customers
Accommodation, restaurants, culture, and recreation	• Increased insurance costs for businesses in 'at risk' locations. • Concepts such as 'flygskam' – flight shaming – have the potential to significantly impact demand for travel, the tourism industry's social licence and the sector's ability to continue to operate into the future.
Agriculture - dairy	• Changing market/ consumer preferences towards products seen as better for the environment. For example, dietary shifts towards low emission products and on farm inputs that increase yield and inhibit farmland expansion. • Measurement and documentation requirements for greenhouse emissions and farm plans may cause increased operational costs for farms, especially smaller producers.
Agriculture - non-dairy	• This sector is also exposed to the impacts described in relation to the Agriculture-dairy sector (see above).
Communications	• Electricity price increases as the electricity for data hubs is exposed to carbon price increases. • Increasing competition for rare earth materials as other industries carry out electrification of their system (e.g. vehicles shifting to electric).
Construction	• Changes to building regulations resulting in increased operational expenses and potential need for large capital expenditure. • Carbon price changes may increase the costs of materials, construction operations, and buildings' operations, especially if supply chains cannot decarbonise fast enough.
Electricity, gas, and water – non power generation	• Rapid electricity demand as New Zealand energy system is electrified. • Increased cost for dispute resolution with landowners and communities as network upgrades are accelerated or delayed.
Electricity, gas, and water – power generation	• The electrification of industrial processes, and the speed of electric vehicle (EV) uptake and the extent to which EVs influence the supply or demand on the electricity network (demand side management).
Financial, investment and insurance	• Insurers may be vulnerable if reinsurance ceases to be available for certain risks i.e. there is a gap between the protection received from reinsurance and the risks underwritten by the primary policies.
Forestry and fishing	• Reduced demand for seafood as an emissions-intensive protein. • Reputational risk if forestry slash continues to be a factor in flood risk.

Table cont. next page

Table 10: Examples of impacts of transition risks for customers in each sector (continued)

Sector	Examples of impacts of transition risk for customers
Government, education, health, and community services	• Expenditure due to capital outlay or operational requirements associated with transition to low-carbon resilient facilities (e.g. hospitals).
Manufacturing	• Supply chain disruption as manufacturers look to reduce emissions associated with end products by switching to lower emission suppliers. • Cement industry exposed to increased capital outlay to incorporate technological change.
Mining – coal	• Reputation risk due to high fossil fuel intensity becoming increasingly unfavourable in the market.
Mining – other	• Increased expenditure required to reduce emissions of operations.
Oil and Gas	• Risk that demand in some locations may drop below network investment due to government phase out of gas connections. • Insurance risk as insurers opt out of insuring some industries associated with high emitting fossil fuels.
Personal lending	• Risk of customers employed in sunset industries becoming unemployed if the rate of change is rapid or disorderly, potentially leading to increased default rates.
Property, business, and personal services	• Some Commercial Real Estate may not be able to be easily retrofitted for EV charging, risking reduction in property value relative to those that can be.
Real estate – mortgage	• Uncertainty surrounding potential regulatory changes associated with adaptation schemes. • Insurance retreat from certain areas due to increased incidence and magnitude of some hazards (e.g. flood, sea level rise inundation, wildfire). See anticipated impacts from physical risks in Section 2.5.
Transport and storage	• Technology uncertainty surrounding electric versus hydrogen fuel uptake. • Risk that emerging aviation technologies may emerge faster than anticipated and compete for domestic market share of existing providers (e.g. electric sea gliders competing with domestic aviation).
Wholesale and retail trade	• Market risks due to industry exposure to global carbon pricing through supply chain. • Changing market/ consumer preferences towards products seen as better for the environment. For example, low emission products, renewable packaging, and green construction materials.

2.7 Potential opportunities

Responding to climate change provides opportunities for the banking sector as the entire economy moves towards a low emissions, climate resilient era. These opportunities may emerge from resource efficiency and cost savings, the development of new products and services, access to new markets, technological advances or building resilience across the supply chain.

Examples of climate-related opportunities for BNZ to supports its customers identified to date include:

- **Energy efficient and resilient homes:** Financing will be required to improve inefficient building stock, adapt properties for climate change, and new, climate resilient development. Banks have an opportunity to develop and/ or provide financial instruments and insurance products to help customers adapt and mitigate climate risks.
- **Low emissions transport:** There are opportunities for the transport sector, including reduced operational costs. The opportunities for BNZ arise through the provision of financing solutions for EV and other low-emissions vehicles and associated infrastructure (e.g. charging stations, green hydrogen production etc). Green hydrogen has been identified by New Zealand Trade and Enterprise as an opportunity for New Zealand, for domestic use and export potential.
- **Banking for new industries:** There is an opportunity for BNZ to develop products and services for “green” sectors that respond to climate-related issues. For example, harnessing technology and supporting New Zealand’s agricultural technology sector to assist with transition.

BNZ’s approach to sustainable finance is outlined in our Sustainable Finance Framework, and in Section 4.3 of this Report.

2.8 Transition planning

Climate Strategy

The kaitiakitanga pillar of our Sustainability Strategy[k] and Climate Strategy have the same vision: to accelerate the just transition to a net zero emissions economy, one that supports the regeneration of the natural environment and builds climate resilience.

Our Climate Strategy currently looks across short-term (2025), medium-term (2030) and long-term horizons (2050) to deliver on our strategic objectives[15]. Over the next year we will be working to update our Climate Strategy and BNZ's response to climate change based on progress to date against our targets, and what we have learned about how we need to ensure capital is deployed to the right parts of the economy to address climate risk and accelerate the transition to a low-emissions, climate-resilient economy.

[15]The timeframes adopted for the risk analysis in Table 2 are 2030 and 2050.

Figure 12: BNZ Climate Strategy

Our vision	To accelerate the just transition to a net zero emissions economy, one that supports the regeneration of the natural environment and builds climate resilience			
Our objectives	Transition our investment and lending portfolios to net zero emissions by 2050	Support our customers to transition to low-emissions, 'climate-resilient' business models	Understand our climate-related risk across our portfolios and support our customers to adapt and build resilience	Continue to actively reduce our emissions across our operations and supply chain
Key actions/ targets	• Set 2030, sector-level, science-based reduction targets and implementation plans across our leading portfolios. • Develop an action plan to decarbonise our investment portfolio and increase investment in climate solutions. • Exit all lending to thermal coal mining by 2025 and all remaining lending to coal mining by 2030. • Support 50% of SME customers to measure and report on their climate emissions with an aim of the end of 2025.	• Deliver $10 billion in Sustainable Finance by the end of 2025 • Provide 50 customers with transition assessments by the end of 2022. • Innovate with new, targeted sustainability products and services and identify customer growth opportunities. • Reward customers showing climate leadership. • Develop and implement a clear pricing and credit strategy.	• Identify physical and transitional risks and opportunities across our portfolios. • Integrate climate change into our Risk Management Framework and core risk and credit policies. • Reward customers demonstrating climate resilience and support adaptation. • BNZ will continue to build on our annual climate risk disclosure, aligning with External Reporting Board's Climate Disclosure Standards by FY2024.	• Reduction of operational emissions by 60% by the end of 2025. • Maintain our net carbon zero accreditation across our operations. • Set our emissions-reduction targets across our supply chain by the end of 2023.
Enablers	Improve climate data analytics and operational integration	Banker engagement and KPIs	Access to capital and integration of risk	Strong governance
Principles	Take a holistic, systems approach	Utilise best available science	Support a transition that is 'just'	Centre on engagement
Further information on progress against Climate strategy	**Transition to net zero emissions by 2050** Our first round of emissions reduction targets is summarised below. Section 3.1 discusses our work on the Climate Action Toolbox to support our SME customers to measure and report on their carbon emissions.	**Support our customers** Our approach to sustainable finance is set out in Section 4.3, Climate-related Metrics.	**Understand climate-related risk** Physical and transition risk analysis can be found in sections 2.5 and 2.6, while our approach to integration of climate risk in our Risk Management Framework is in Section 3.	**Reduce emissions** Our approach to reduction of our emissions across our operations and supply chain is discussed in Section 4.1, Metrics & Targets.

BNZ Net Zero Banking Alliance decarbonisation targets

BNZ is committed to contributing to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5°C above pre-industrial levels. Through setting targets for our financed emissions and tracking the level of our financing to various companies and sectors, we can better allocate our capital towards the transition to a low emissions economy. In May 2023, as part of BNZ's Net Zero Banking Alliance (NZBA) commitment, signed in October 2021, we published our first round of emissions reduction targets for four of the NZBA identified priority sectors[1]; Coal Mining, Agriculture - Dairy, Power Generation, and Oil and Gas sectors[16]. These sectors were chosen because of their emissions intensity, the relative availability of emissions data, and the relative amounts that we lend to these sectors. Both intermediate and long-term targets have been set for these sectors to support meeting the temperature goals of the Paris Agreement, including science-based decarbonisation pathways. A detailed description of each target including the industry activities covered by the target and the reference scenario used is provided in our NZBA Target Disclosure, available at Sustainability reports - BNZ.

Progress against each published emissions reduction target will be reported annually in our Climate Reports, using the relevant target metric for the sector (refer to Section 4). We will explain challenges we have encountered and whether there have been changes to our target, baseline, or assumptions for relevant sectors. We do not anticipate consistent linear progress to be made between now and meeting each of our sector targets – significant uncertainty remains around how and when each sector will decarbonise, impacted by changes to policy, technology, and market preferences. The approach for Coal Mining differs due to our 2020 decision to exit all lending to thermal coal mining by the end of 2025, and all remaining lending to coal mining by the end of 2030.

We are currently aiming to meet our interim 2030 targets for the Dairy, Power Generation and Oil and Gas sectors without the use of offsets. We recognise offsets will likely play a role for remaining hard to abate emissions to reach our target of net zero emissions for investment and lending portfolios by 2050.

Achieving decarbonisation targets

Some priorities to integrate our decarbonisation targets across BNZ's business and operations include:

- Reviewing the decarbonisation transition plans of our highest emitting customers.
- Guidance and training for colleagues on targets set and how to assess the impact of additional financing on existing targets.
- Improved customer emissions data quality, access to emissions data, and data systems to store and track emissions information.
- Develop high level transition plans for the Dairy, Power Generation, and Oil and Gas sectors.

[16]These sectors correspond to Mining – coal; Agriculture – dairy; Electricity, gas, and water – power generation; and Oil and Gas as described in this Report.

3. Risk Management

3. Risk Management:

BNZ defines climate risk as the potential risks that may arise from climate change or from efforts to mitigate climate change, their related impacts, and their economic and financial consequences for BNZ and our customers or suppliers. This is assessed, to the extent possible, based on the data available (further detail is outlined in Section 2 Strategy above).

BNZ includes climate risk within "Sustainability Risk," which has been identified as a material risk category across the NAB Group. Sustainability Risk is the risk that Environmental, Social or Governance (ESG) events or conditions negatively impact the risk and return profile, value, or reputation of BNZ or its customers and suppliers, or its ultimate parent company.

BNZ considers climate risks over the short term to 2030 (0 to 7 years), medium term to 2040 (7 to 17 years), and long term to 2050 (17 to 27 years), aligning to the time frames identified for the physical and transition risk analysis in Section 2, the decarbonisation targets (described in Section 4.1) and, broadly, to lending timeframes for different products provided by BNZ to its customers (such as a home loan term). This report presents analysis as at both 2030 and 2050.

We are at an early stage of understanding climate-related impacts (as noted in the Strategy section) and data is limited in relation to some customers, sectors, and suppliers. These limitations mean there may be aspects of BNZ's value chain that are not currently included.

The following aspects of the value chain were specifically excluded[17]:

- Emissions reporting of purchased goods and services.
- We have not modelled the impact of physical risks on BNZ's own operations i.e. our corporate offices, Partners Centres, and branch network (Section 2).

BNZ's Sustainability Risk Management Framework was developed during FY23 and includes all elements of BNZ's sustainability risk management, including the previous Climate Risk Management Framework. The Sustainability Risk Management Framework details how climate-related risk is integrated into our Risk Management Framework and assists the Board to discharge its overall responsibility for managing Sustainability Risk, including climate-related risk.

We conducted Climate Risk Assessments in 2021 on FY20 data, and in 2022 on FY21 data. Physical and transition risk analysis in this report covers FY22 and FY23 data.

The Board approves the overarching Risk Management Strategy (RMS), including the Risk Management Framework (RMF), and the Risk Appetite Statement (RAS), following receipt of a recommendation from the Board Risk & Compliance Committee. Climate-related risk is integrated into these processes through its inclusion in the material risk category of Sustainability Risk under both the RMS and the RAS.

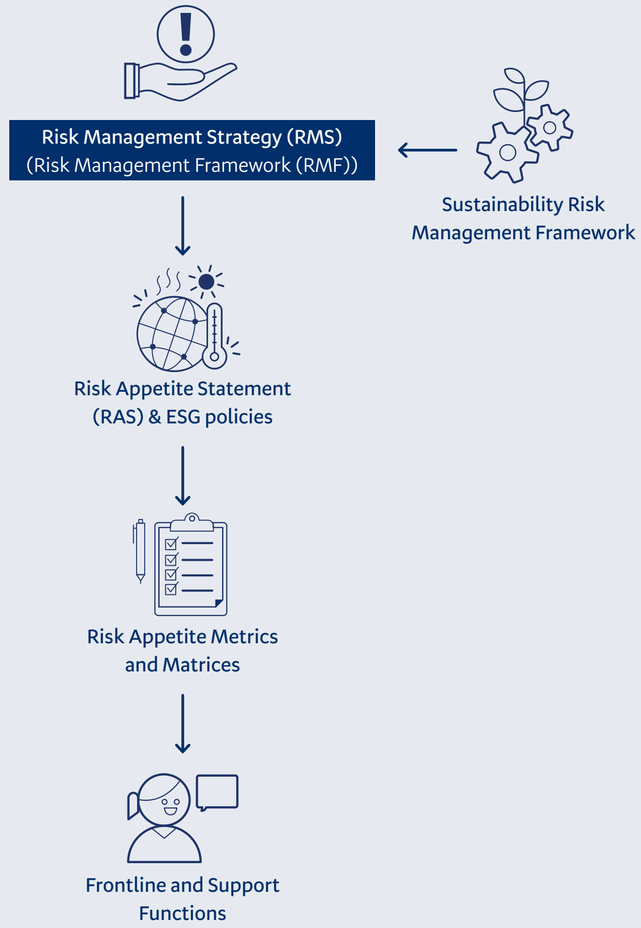
The RAS is a key component of the RMF, setting out BNZ's risk tolerances, including capturing those climate-related financial risks for which we have sufficient data.

BNZ's ESG policies use a classification framework of prohibited, high risk, and sensitive sectors (which includes industries with climate risk factors) to guide our on-boarding, lending and other customer-facing decisions.

Both the RAS settings and BNZ's ESG policies are implemented through Risk Appetite Metrics and Matrices and ESG checklists to ensure these are appropriately rolled out to, and applied by, frontline bankers and support functions making customer-facing decisions.

The BNZ Sustainability RMF sets out how BNZ manages climate risk by setting out how BNZ identifies, evaluates, and manages climate risk (see Figures 14, 15 and 16 for more detail).

Figure 13: Integration of climate risk within our overall Risk Management Framework



[17]Refer to specific disclaimers and exclusions noted throughout this Report.

3.1 Risk identification

We use risk identification tools and methods to understand current and emerging risks (see below for examples of these tools and methods). We also monitor and assess current risks to manage these effectively within our risk appetite. We continue to make progress on the use of tools and methods to integrate climate-related risk into our overall risk identification process, as more data and tools become available.

Climate-related risks can be different to other material risk categories due to the extended and multi-year timeframes, interdependencies, and levels of uncertainty about the potential impacts of climate change on BNZ and its customers. The characteristics that make climate-related risks different from other risk categories are incorporated into the risk identification processes set out in our Sustainability Risk Management Framework which builds on and enhances existing processes within our Risk Management Framework. The process diagram at Figure 14 provides an example of how BNZ uses available data to identify climate-related risks.

Below are some climate-related risk factors we are currently able to assess and have incorporated into some of our risk assessments for customers, industry sectors and BNZ's operations:

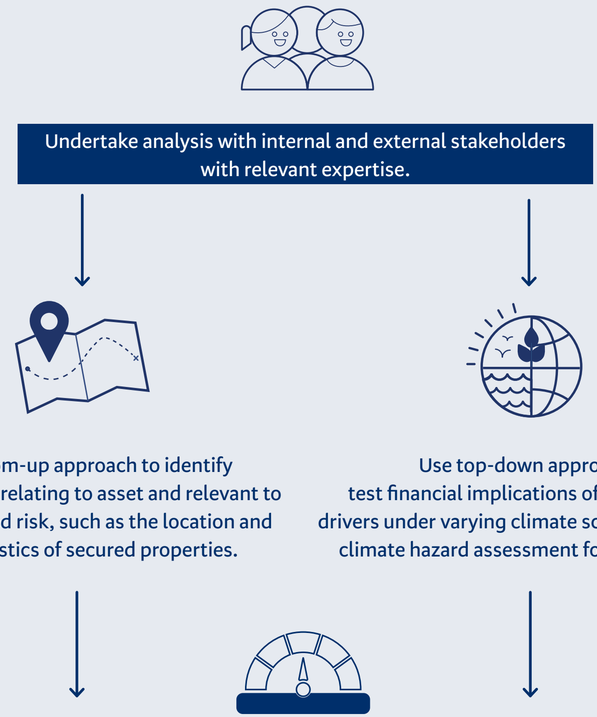
- vulnerability to extreme weather events (including supply chain disruption and disruption to business activities)
- level of GHG emissions
- exposure to high levels of transition risk, such as potential exposure to changes in climate-related policy or technology.

Tools and methods used to identify climate-related risk

Examples of tools and methods BNZ uses to identify the scope, size, and potential impact of climate-related risk include:

- **Customer engagement:** BNZ completes ESG checklists to identify ESG risks including climate-related risk for customers who fall within defined sector criteria. In FY22 BNZ met its goal of reviewing the decarbonisation transition plans of our top 50 emissions-intensive customers, which has continued to inform discussions with some of those customers in FY23.
- **Climate Action Toolbox:** In partnership with the NZ Sustainable Business Network (sustainable.org.nz) and other public and private sector partners, BNZ developed an online Climate Action Toolbox available to small and medium enterprise (SME) customers. In FY22, the Carbon Calculator was added to the Climate Action Toolbox. SME customers can use the calculator to better understand their emissions impact, enabling them to set goals and track emission reductions over time. In FY23, more upgrades have been made including industry-specific content, with the construction industry being the first.
- **Stress testing:** In FY22 BNZ participated in the RBNZ stress testing assessment of flooding risks to banks' residential mortgages[m] and drought and increasing emissions price scenarios on the agriculture portfolio[n]. BNZ is participating in RBNZ's current 2023 Climate Stress Test (please see the RBNZ website for details of the Climate Stress Test scenario[o]). Stress test results are incorporated into the development of BNZ's Internal Capital Adequacy Assessment Process (ICAAP) which is used to ensure that the bank has adequate overall capital in relation to its risk profile.
- **Scenario analysis:** Information on BNZ's approach to scenario analysis is set out in Section 2.3 above.
- **Regulatory change monitoring:** The need to respond to climate change risk and opportunity is driving government consultations, new legislation, policy change, and wider requirements. BNZ follows its existing regulatory change process for monitoring and identifying regulatory change related to Sustainability Risk, including climate risk, and embedding that change into its business.

Figure 14: Example of how we identify climate-related risk as part of our physical and transition risk analysis

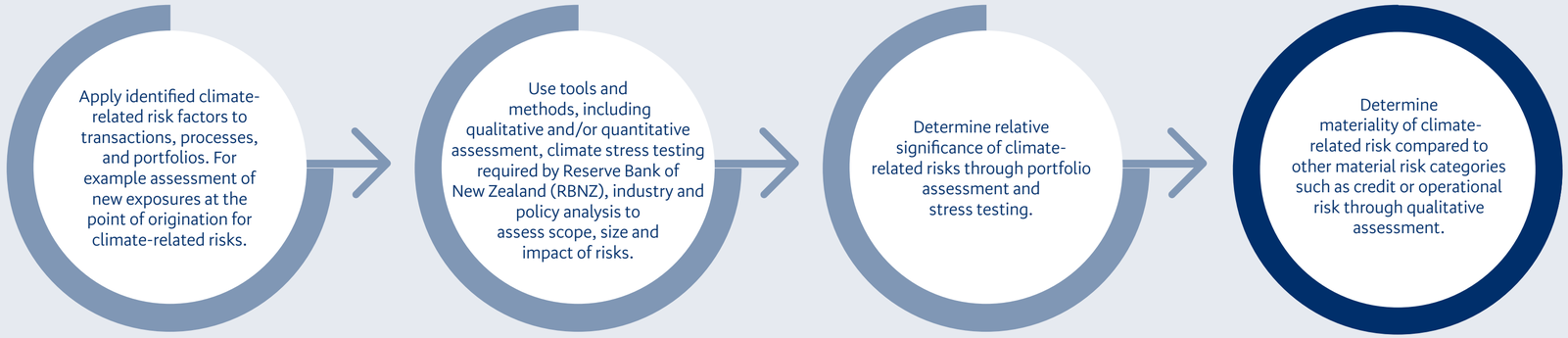


3.2 Risk assessment

BNZ's wider RMF uses stress testing and scenario analysis to assess risk, understand vulnerabilities, and inform risk assessments and decision-making. BNZ conducts regular single risk sensitivity testing and periodic enterprise-wide macroeconomic stress testing. BNZ is prudentially regulated by RBNZ and has established processes for assessing relative risks, such as the ICAAP which includes climate risk as part of Sustainability Risk.

BNZ also assesses the impact of climate-related risks in other relevant material risk categories, such as credit risk and operational risk.

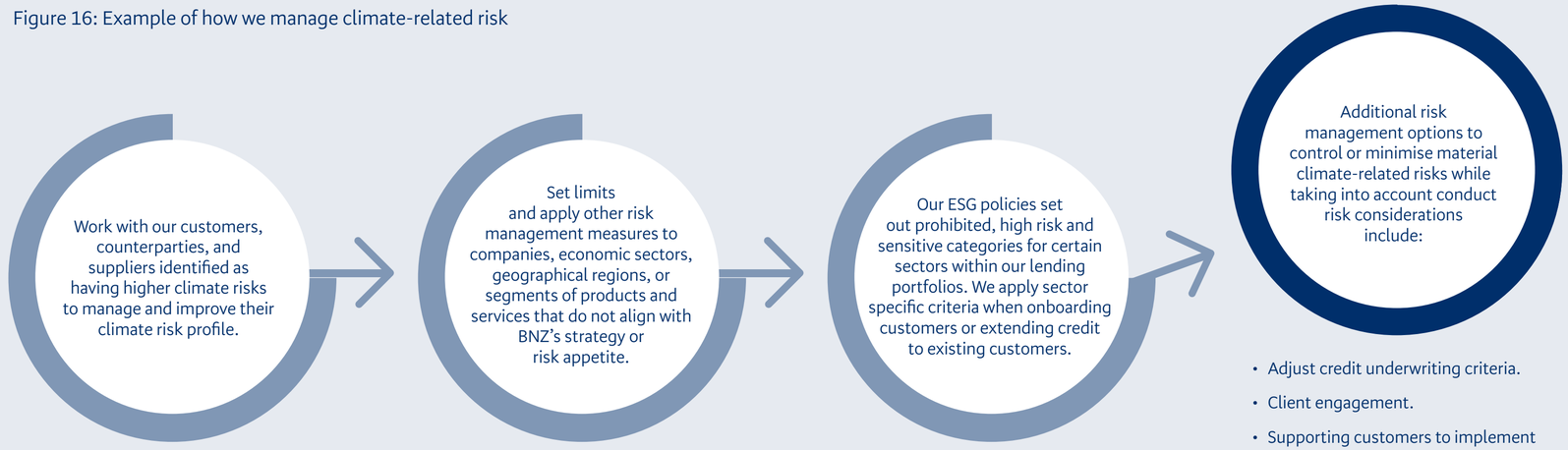
Figure 15: Example of how we assess climate-related risk



3.3 Risk management

Some risk management options we will use to manage climate-related risks include:

Figure 16: Example of how we manage climate-related risk



4. Metrics and Targets

We set climate-related metrics and targets and disclose these annually in our climate reports. Our key existing metrics and targets are discussed below. We use operational and financial data to measure our climate-related performance and progress towards meeting our climate-related goals.

4.1 GHG Emissions

BNZ measures its GHG inventory in accordance with the GHG Protocol Corporate and Corporate Value Chain (Scope 3) standards[18], Toitū net carbonzero certification requirements, and in line with ISO 14064-1. See Appendix C for additional details on our GHG emission methodology, key assumptions, and limitations. All our reported emissions, except financed emissions, have been externally assured by Toitū Envirocare since 2022. We continue to hold Toitū net carbonzero certification[19] which means we have met the criteria required for compliance with measuring these emissions to Toitū requirements; managing and reducing emissions against Toitū requirements; and offsetting remaining net emissions[20], excluding employee commute, and financed emissions.

BNZ has increased engagement with suppliers to support their emissions measurement and reduction. In 2023, we set a supplier engagement target where we will engage with 67% of BNZ suppliers by emissions (covering purchased goods and services) on emission reductions within their business, aiming for these suppliers to set science-aligned targets by 2028 against a 2023 baseline.

BNZ continues to increase the sources of emissions that we measure. We began measuring and reporting emissions from key suppliers that provide transport and logistics services to BNZ in 2022 and employee commute and upstream purchased fuel and electricity have been added in 2023. These scope 3 emission sources have been included in our[21] GHG Inventory, but not reported against our progress toward meeting our 2025 operational emissions reduction target, which was formulated in 2019 based on the GHG Inventory measured and reported at that time. For ease of understanding, we present emissions data with and without these additional scope 3 emissions sources in Table 11.

[18] Corporate Value Chain (Scope 3) Standard | GHG Protocol

[19] See our Toitū Envirocare Assurance Report at Sustainability reports - BNZ

[20] Net emissions represent our gross emissions less emissions from sources that have already been offset by our suppliers. For example, emissions associated with the Toitū climate positive certified electricity BNZ purchases from Ecotricity has already been offset to zero. Sustainability reports - BNZ

[21] BNZ currently measures and reports all GHG emissions except financed emissions for the period from July to June of the next year, to align with NAB's regulatory environmental reporting period. BNZ intends to change next year to align its GHG emissions with BNZ's September financial year reporting period.

Table 11: BNZ GHG emissions, excluding financed emissions – measured against our 2025 target*

	YE19 Baseline	YE21	YE22	YE23	YE25 target
Scope 1 (tCO_2e)	3,846	2,519	1,487	1,520	n/a
Scope 2 (tCO_2e)	1,559	1,397	1,357	855	n/a
Scope 3 – baseline categories (tCO_2e)	5,964	1,799	1,836	3,537	n/a
Total gross operational emissions against 2019 baseline (tCO_2e)	**11,369**	**5,715**	**4,680**	**5,911**	**4,548**
Scope 3 – new emissions sources: Employee commute, courier-freight-logistics, and upstream purchased fuel and electricity. (tCO_2e)	1,409	1,227	1,155	5,429	n/a
Total gross emissions incl. new scope 3 emissions source excluding financed emissions. (tCO_2e)	**12,779**	**6,942**	**5,835**	**11,340**	**n/a**

*Scope 1: Emissions from operations that are owned and controlled by the reporting company

Scope 2: Emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company (calculated using the location-based method).

Scope 3: Indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions (excluding financed emissions).

Scope 3 Baseline Categories: These include all scope 3 operational emission sources that were captured and measured at the time of setting BNZ's baseline of FY19 and exclude the following additional scope 3 emissions sources: employee commute, upstream purchased fuel and electricity, courier-postage-freight and financed emissions.

Gross Operational Emissions against 2019 baseline: This represents all emissions excluding the 'scope 3 emission additional sources' added subsequent to formulating the 2025 operational emissions target and financed emissions.

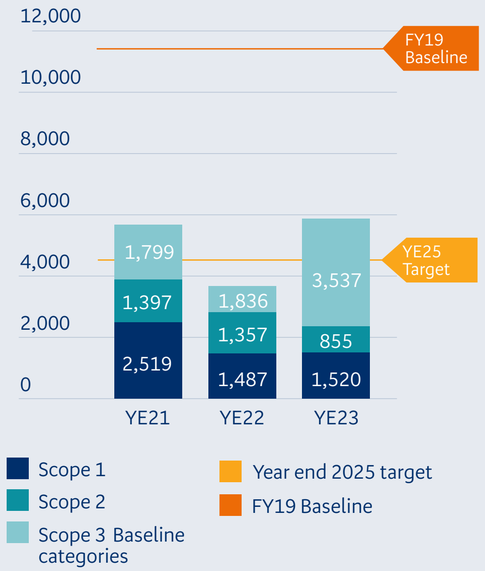
Scope 3 Additional Emissions Sources: these include employee commute, courier-freight-logistics and upstream purchased electricity and fuel emissions. These emission sources are excluded from our 2025 operational emissions target.

Year End (YE): BNZ currently measures and reports operational emissions for the period from July to June of the next year, to align with NAB's environmental reporting period. This is intended to change next year to align with the financial year reporting period. YE22 scope 2 and 3 emissions have been restated due to Ministry for the Environment (MfE) emission factor update that was published after we had completed our YE22 reporting.

We have made good progress toward our target to reduce our gross operational emissions by 60% by 2025 from a 2019 baseline. In 2023, we continued to focus on converting our vehicle fleet to electric/plug-in hybrid vehicles (PHEV) and have rolled out more vehicle chargers at key BNZ hubs.

Reducing some targeted scope 3 emission categories is particularly challenging and in 2023 we had an increase in business travel, which includes air travel, employee vehicle business travel, rental cars and taxi use.

Figure 17: Operational emissions compared to reduction target against 2019 baseline



Our 2022 scope 2 and 3 data has been restated due to Ministry for the Environment (MfE) emission factor update that was published after we completed our FY22 reporting.

As a result, we have built a new reporting tool to monitor and help manage business travel. We continue to work towards our 2025 operational emissions reduction target and refining our strategies to achieve this.

4.2 Financed emissions

Financed emissions are GHG emissions that make up part of our scope 3 inventory through our lending and investment activities. We currently report financed emissions on Gross loans and advances to customers, including business lending and real-estate mortgages but excluding personal lending[22]. These activities fall within Scope 3, category 15 (investments) of the GHG Protocol and are often the most significant part of a financial institution's GHG Inventory. We use financed emissions as a key metric to estimate the climate impact of our financing activity and set a baseline for our climate ambition to align with the 2015 Paris Agreement and the targets in the Climate Change Response (Zero Carbon) Amendment Act 2019.

BNZ follows the Partnership for Carbon Accounting Financials (PCAF) standard, where possible, for the measurement of financed emissions. We apply the PCAF business loans and mortgage asset class measurement methods and disclose financed emissions by sector because it harmonises with our approach for sector-based decarbonisation targets and is permitted by PCAF[p]. In FY22, we reported financed emissions for our Power Generation, and Oil and Gas portfolios for the year ended 30 September 2021, representing 1% of our loan book. This year, we have expanded our financed emissions calculations to cover industry sectors representing 99% of our Gross loans and advances to customers. Personal lending, representing less than 1% of Gross loans and advances to customers, is excluded given its relatively small size and limited quantification methodologies.

We calculate and report financed emissions based on both the outstanding amount (OA) of loans, as required by PCAF, and the total committed exposure (TCE) as reflected in Table 12 and 13. TCE provides a more stable metric by which to measure and set emission reduction targets because it quantifies the amount committed to the customer at any given time and is less likely to fluctuate. Where possible, we estimate absolute emissions based on scope 1, 2 and 3 emissions attributable to our lending. Both OA and TCE exposures included in these calculations are as at the BNZ balance date specified in Tables 12 and 13. We note that customer-related financials and emissions data balance dates may vary from the BNZ balance date. We have used and reported customer data as at the closest balance date preceding BNZ's balance date.

There are inherent uncertainties in the estimation of financed emissions with considerable variability in data quality. We follow the PCAF guidance for estimating and reporting the data quality of financed emissions. A score of one (1) is best, reflecting verified and disclosed customer emissions. A score of five (5) is worst reflecting the highest level of uncertainty (e.g. using sector average emissions). Our 2023 overall PCAF data quality scores are 4.32 (based on OA) and 4.36 (based on TCE). These scores reflect significant challenges with sourcing customer level emissions data and a lack of a nationwide programme that generate suitable publicly available emissions metrics for higher data quality financed emissions reporting. For example, New Zealand does not have compulsory building energy labels, unlike the European Union. Despite the high overall PCAF score, we view our full sector financed emission reporting as having value to inform and shape our sector decarbonisation targets and strategies. See Appendix E for additional details on our financed emission methodology, including assumptions, and limitations.

[22]Personal lending includes personal loans, overdrafts, and credit card debt.

Following our baseline restatement guidelines, we have restated the 2021 financed emissions baselines for the Oil and Gas and Power generation sectors. Restatements were due to methodology changes including accessing more accurate and complete customer emissions data; refining our treatment of conglomerate customers with activities spanning multiple sectors to improve reported emissions per sector, and; transferring the power distribution sub-sector, from Electricity, gas, and water – power generation to Electricity, gas, and water - non power generation. In addition, we realigned some customers reported financials and emissions to the closest balance date preceding BNZ's balance date.

Table 12: Estimated financed emissions – based on Outstanding amount (OA)

	September 2021					September 2022					September 2023				
Using Outstanding Amount (OA)	Financed Emissions (tCO2e)			Gross loans and advances to customers	Data quality	Financed Emissions (tCO2e)			Gross loans and advances to customers	Data quality	Financed Emissions (tCO2e)			Gross loans and advances to customers	Data quality
Sector	Scope 1 & 2	Scope 3**	Total	% assessed	PCAF scores	Scope 1 & 2	Scope 3**	Total	% assessed	PCAF scores	Scope 1 & 2**	Scope 3**	Total	% assessed	PCAF scores
Accommodation, restaurants, culture and recreation											10,644		10,644	100%	5.00
Agriculture - dairy											883,729	153,899	1,037,629	100%	3.50
Agriculture - non dairy											1,956,978		1,956,978	100%	5.00
Communications											564		564	100%	5.00
Construction											56,796		56,796	100%	5.00
Electricity, gas and water - non power generation											22,974		22,974	100%	5.00
Electricity, gas and water - power generation*	61,551	85,193	146,744	97%	1.93	62,022	46,408	108,431	97%	2.00	23,325	31,879	55,204	94%	1.67
Financial, investment and insurance											24		24	100%	5.00
Forestry and fishing											23,405		23,405	100%	5.00
Government, education, health and community services											4,088		4,088	100%	5.00
Manufacturing											362,366		362,366	100%	5.00
Mining - coal											195		195	100%	5.00
Mining - other											4,368		4,368	100%	5.00
Oil and Gas*	224,541	672,280	896,821	92%	1.80	106,476	406,849	513,325	81%	2.00	72,687	535,713	608,400	87%	2.00
Property, business and personal services											10,545		10,545	100%	5.00
Real estate - mortgage											59,958		59,958	100%	4.00
Transport and storage											153,878		153,878	100%	5.00
Wholesale and retail trade											31,963		31,963	100%	5.00
Total in-scope portfolio assessed	**286,092**	**757,473**	**1,043,565**	**1%**		**168,498**	**453,257**	**621,755**	**1%**		**3,678,487**	**721,492**	**4,399,979**	**99%**	**4.32**

*September 2021 financed emissions have been restated due to now including scope 3 emissions, better quality data becoming available and a conglomerate customer methodology enhancement making emissions per sector more accurate.
**The coverage limitations of these figures are explained in Appendix E.

Table 13: Estimated financed emissions – based on Total Committed Exposure (TCE)[23]

	September 2021					September 2022					September 2023				
Using Total Committed Exposure (TCE)	Financed Emissions (tCO2e)			Gross loans and advances to customers	Data quality	Financed Emissions (tCO2e)			Gross loans and advances to customers	Data quality	Financed Emissions (tCO2e)			Gross loans and advances to customers	Data quality
Sector	Scope 1 & 2	Scope 3**	Total	% assessed	PCAF scores	Scope 1 & 2	Scope 3**	Total	% assessed	PCAF scores	Scope 1 & 2**	Scope 3**	Total	% assessed	PCAF scores
Accommodation, restaurants, culture and recreation											13,505		13,505	100%	5.00
Agriculture - dairy											938,797	163,746	1,102,543	100%	3.50
Agriculture - non dairy											2,132,552		2,132,552	100%	5.00
Communications											778		778	100%	5.00
Construction											75,309		75,309	100%	5.00
Electricity, gas and water - non power generation											37,850		37,850	100%	5.00
Electricity, gas and water - power generation*	109,829	120,608	230,437	98%	1.74	126,787	97,186	223,973	99%	1.64	51,232	35,693	86,925	97%	1.38
Financial, investment and insurance											38		38	100%	5.00
Forestry and fishing											30,130		30,130	100%	5.00
Government, education, health and community services											6,041		6,041	100%	5.00
Manufacturing											513,501		513,501	100%	5.00
Mining - coal											1,936		1,936	100%	5.00
Mining - other											5,230		5,230	100%	5.00
Oil and Gas*	268,396	1,701,277	1,969,673	95%	1.68	285,387	1,427,274	1,712,660	89%	1.70	130,513	1,150,125	1,280,638	85%	2.00
Property, business and personal services											12,937		12,937	100%	5.00
Real estate - mortgage											61,916		61,916	100%	4.00
Transport and storage											220,027		220,027	100%	5.00
Wholesale and retail trade											40,913		40,913	100%	5.00
Total in-scope portfolio assessed	**378,225**	**1,821,885**	**2,200,110**	**1%**		**412,174**	**1,524,459**	**1,936,633**	**1%**		**4,273,205**	**1,349,564**	**5,622,769**	**99%**	**4.36**

*September 2021 financed emissions have been restated due to now including scope 3 emissions, better quality data becoming available and an conglomerate customer methodology enhancement making emissions per sector more accurate. **The coverage limitations of these figures are explained in Appendix E.

[23]The TCE per sector used for financed emissions will differ from that used for physical and transition risk in instances where the conglomerate methodology is applied for conglomerate customers (ie those with more than one type of business or industry sector) that exceed the application threshold. In total, the TCE used for financed emissons and physical and transition risk is the same.

4.3 Climate-related metrics

The methodology for the calculation of the climate-related risk metrics set out below is as described in Section 2 and Appendix B of this Report.

Table 14: BNZ's physical risk metrics for FY22 and FY23

Metric	FY22	FY23
Sea level rise inundation		
Potential % of properties exposed to sea level rise inundation in 2030	0.35%	0.36%
Potential % of properties exposed to sea level rise inundation in 2050	0.50%	0.50%
Coastal inundation		
Potential % of properties exposed to extreme coastal inundation in 2030	3.01%	3.00%
Potential % of properties exposed to extreme coastal inundation in 2050	3.93%	3.92%

SSP5-8.5 climate model with a 99th percentile was selected. A 1% AEP inundation event was used for extreme coastal inundation. The exposure is identified where the mean inundation depth of a parcel is greater than zero metres. The percentage represents the proportion of properties from BNZ's loans secured by geocoded properties.

Table 15: BNZ's transition risk metrics for FY22 and FY23

Metric	FY22	FY23
Emissions-intensive industries		
Potential TCE of loans in 'High' emissions-intensive industries	$16,092m	$15,888m
Potential TCE of loans in 'Medium High' emissions-intensive industries	$3,794m	$4,126m
Potential % of TCE for loans in 'High' emissions-intensive industries	28.7%	28.7%
Potential % of TCE for loans in 'Medium High' emissions-intensive industries	6.8%	7.5%

Emissions-intensive industries are based on MBIE analysis. Loans represent TCE of Gross loans and advances to customers. The percentage represents the proportion of the TCE from BNZ's industry-related loans within Gross loans and advances to customers.

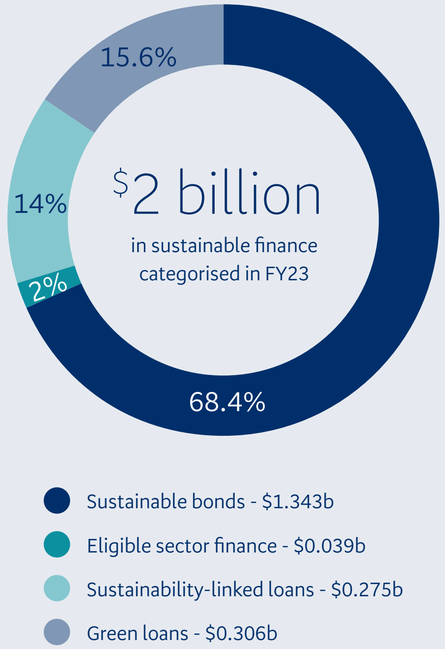
Climate-related opportunities – sustainable finance

We recognise that achieving a just transition to a more sustainable economy will require shifting capital flows toward businesses involved in that transition.

In 2020, BNZ committed to delivering $10 billion in sustainable finance[24] by 2025, in accordance with our Sustainable Finance Framework to support our clients and the just transition to a more sustainable economy by allocating capital in a way that drives positive economic, social, and environmental impacts.

In FY23, BNZ provided a further $2.0 billion[25] in sustainable finance funding, totalling a cumulative $4.8 billion in funding against our $10 billion target. The positive sustainability impacts from this funding, and the types of funding covered by the framework, include other ESG related activity and are not limited to climate. In addition to the sustainable finance activities counted towards our target, BNZ is committed to funding communities to build resilience and support the transition to a low emissions economy. Two examples of funding that achieves this, but currently sit outside the Sustainable Finance Framework, are the $1 billion Business Recovery and Resilience Fund and $800 million of social development bonds issuance supported (as lead manager or arranger) by the BNZ Debt Capital Markets in FY23, making a total of $3.3 billion since 2021.

Figure 18: BNZ Sustainable finance categorised in FY23[25]



[25]These values include $0.051b of green loans and $0.038b of eligible sector finance from the year ended 30 September 2022, and $0.022b of green loans from the year ended 30 September 2021, which were categorised as sustainable finance transactions during the year ended 30 September 2023.

[24]Our Sustainable Finance Framework (see BNZ Sustainable Finance Framework) defines sustainable finance as finance activity labelled as Green or Social where the purpose or "use of proceeds" of a loan or bond is dedicated (or restricted) to green or social projects, as agreed by BNZ. The use of proceeds must provide clear environmental benefits for green projects and positive social outcomes for social projects. These benefits and eligibility of the projects are assessed through criteria set out in the sustainable finance framework. Sustainable linked finance products are products structured to incentivise the borrower's achievement of predetermined sustainability performance objectives. Progress toward these objectives is measured using Key Performance Indicators (KPIs) against which well-defined Sustainability Performance Targets (SPTs) are set.

4.4 Sector decarbonisation targets

Our approach to decarbonisation targets is outlined section 2.8 of this Report. Progress toward meeting sector decarbonisation targets for Oil and Gas, Agriculture - dairy, and Power generation is outlined below as is our progress toward exiting financing of the coal sector. A detailed description of each target, including the industry activities covered by the targets, key assumptions, and the reference scenario used is provided in the Target Disclosure[q]. BNZ intends, as noted in the Target Disclosure, to publish sector transition plans for these sectors by 30 April 2024. Appendix D summarises emissions measurements, sector inclusions, and the sector-level settings for each NZBA sector target.

Our Oil and Gas sector target is a 21% reduction in absolute financed emissions by 2030, from a 2021 baseline using the IEA NZE 2050 pathway which is consistent with the Paris Agreement. The target is limited to upstream Oil and Gas industries, i.e. those that primarily explore or extract Oil and Gas, and covers scope 1, 2 and 3 emissions. Since 2021, upstream financed emissions for this sector have reduced by 13% reflecting reduced financial exposure to the sector.

Figure 19: Upstream Oil and Gas sector target and reference scenario

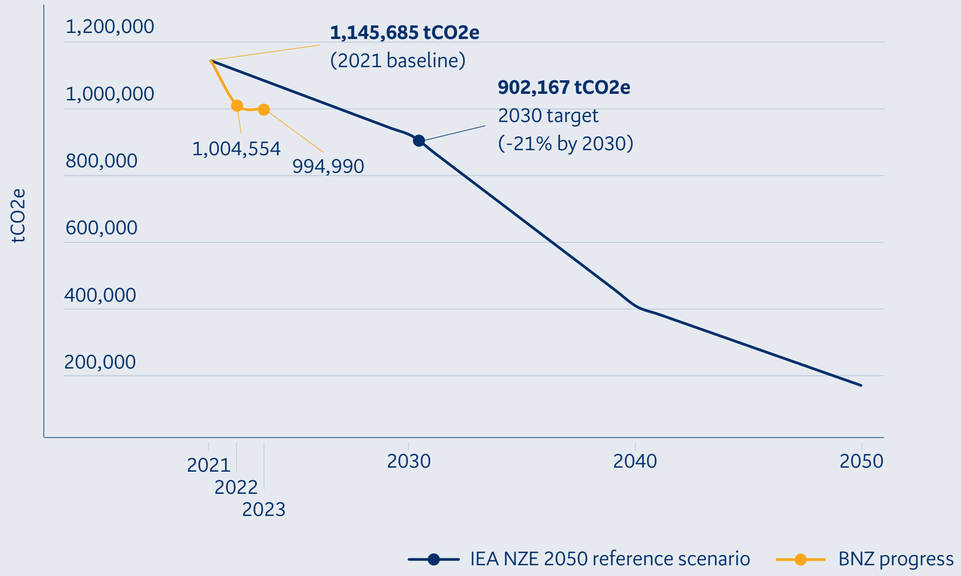
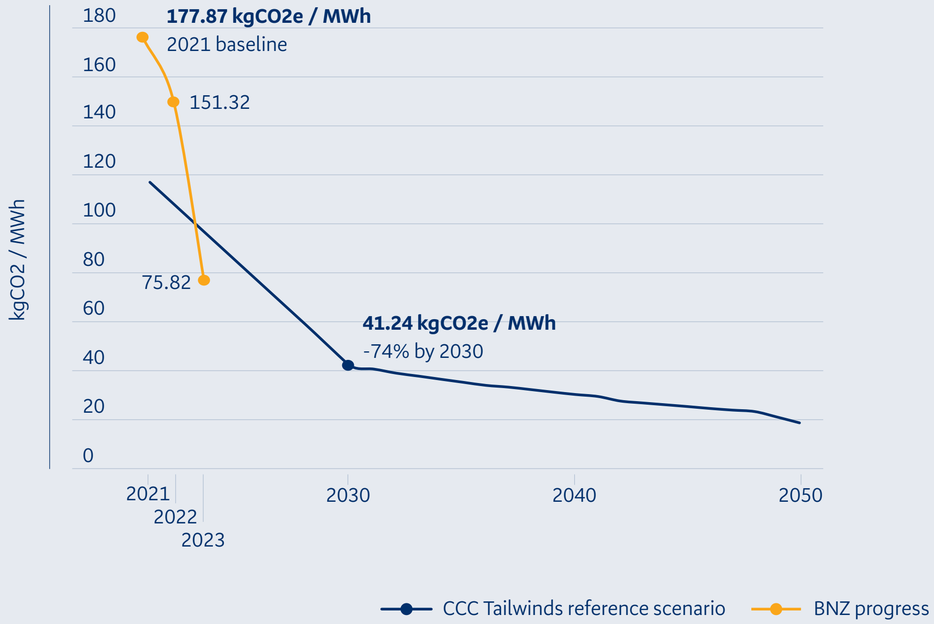


Figure 20: Power generation sector target and reference scenario



Our Power generation target is a 74% decrease in emissions intensity (kgCO2e / MWh) by 2030, against a 2021 baseline using the CCC Tailwinds pathway in order to achieve net zero GHG emissions by 2050. The target includes scope 1 and 2 emissions.

Since 2021, the financed emissions intensity of this sector has decreased 57%.

The dominant driver of this decrease has been changes in hydrological conditions with 2023 being wetter than 2021 and, therefore, more renewable electricity being generated.

Additional drivers include an increase in renewable electricity generation capacity by customers, successful implementation of CO2 reinjection projects by geothermal generators, and increasing exposure to less emissions-intensive generators.

The 2021 baseline has been restated from 157 kgC02e/MWh to 178 kgC02e/MWh due to better quality data becoming available, and a conglomerate customer methodology enhancement making emissions per sector calculations more accurate.

Our Agriculture - dairy emissions reduction target is an 11% reduction in financed biological emissions intensity (kgCO2e/kgMS) by 2030 against a 2022 baseline, using the CCC Demonstration Pathway in order to reach net zero for all long-lived GHGs by 2050.

Since the 2022 baseline year, biological emissions per milk solids (MS) have increased by 2.8%.

This has been driven by an increase in funding to dairy customers that are outside of our measured sample, combined with conservatively assigning them a higher than average emissions intensity in the absence of actual measurements being available.

Figure 21: Agriculture - dairy sector

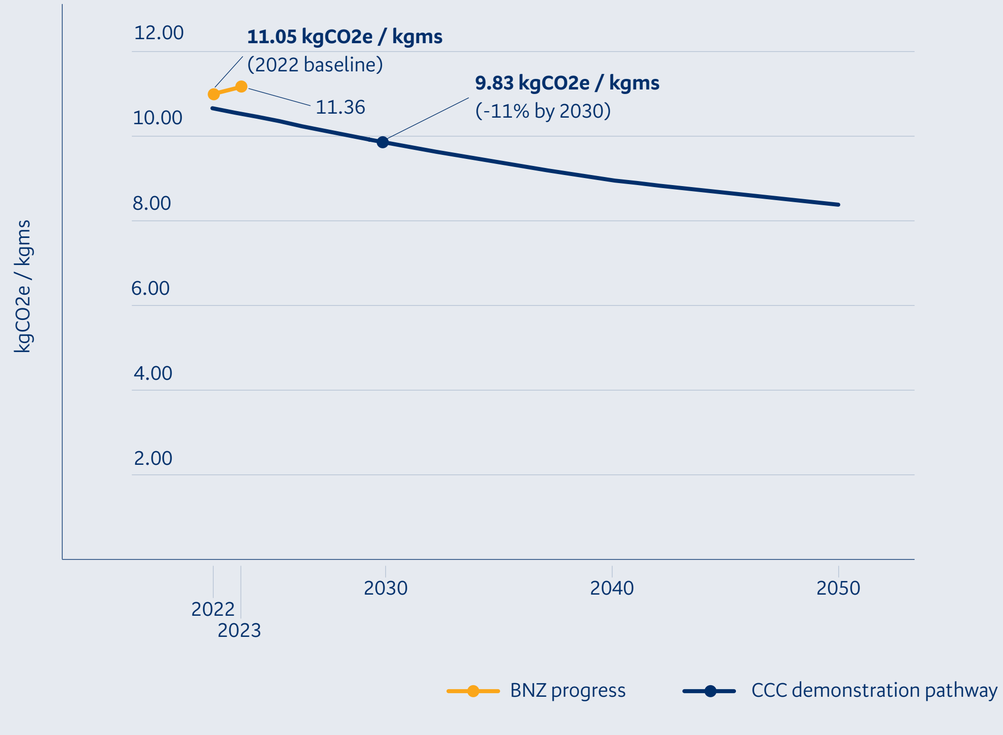
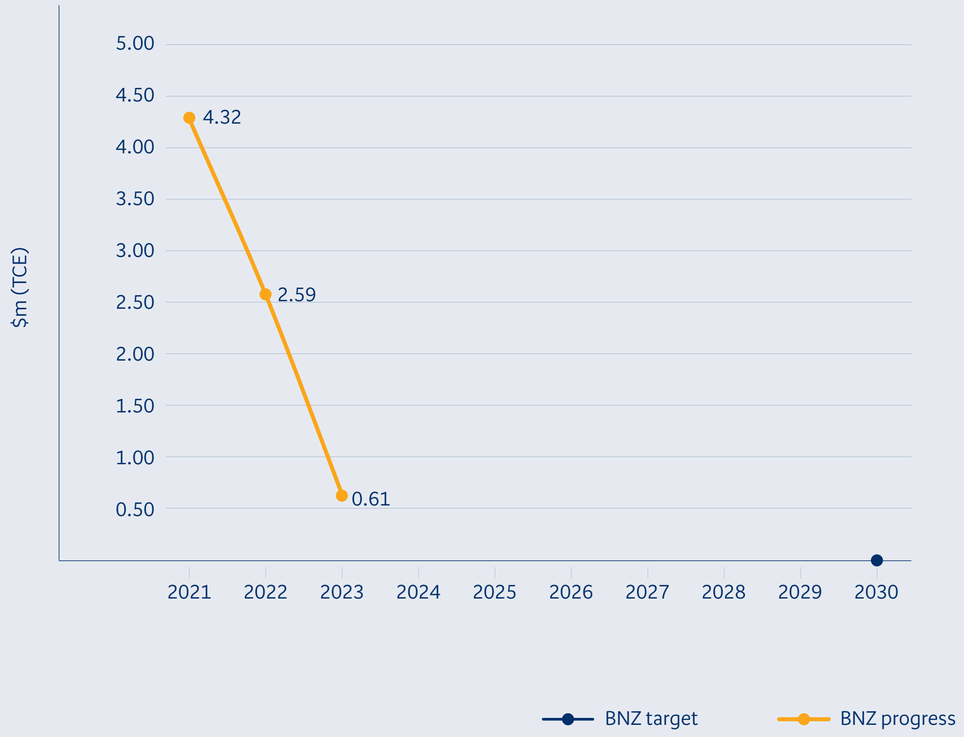


Figure 22: Coal mining sector lending target



Our Coal mining sector target is to exit all lending to thermal coal mining by the end of 2025, and all remaining lending to coal mining by the end of 2030.

Since the 2021 baseline year, our committed lending to this sector has decreased by 86%.

There has been a restatement of the 2021 baseline from $8.2M to $4.32M to reflect only irrevocable lending commitments (TCE) to the coal sector.

Appendix

Appendix A - glossary:

This glossary incorporates the defined terms contained in the Aotearoa New Zealand Climate Standard 1 Climate-related Disclosures (NZ CS 1) issued by the XRB on 14 December 2022, and additional defined terms which are used in this Report.

Table 16: Glossary

Term	Definition
Absolute target	A target defined by a change in absolute GHG emissions over time. For example, reducing scope 1 GHG emissions by 50% by 2030 from a 2019 base year.
AEP	Annual exceedance probability - the probability that a given flood i.e. coastal, fluvial (river) or pluvial (rain) will be exceeded on a particular property in any one year.
Climate Standards	Standards issued by the External Reporting Board that comprise the climate-related disclosure framework, available at Aotearoa New Zealand Climate Standards » XRB
ANZSIC	Australia and New Zealand Standard Industrial Classification (a system enabling categorisation of customers by their principal industry sector).
Banking Group	Bank of New Zealand and its wholly owned subsidiaries.
Base year	An historical datum (a specific year or an average over multiple years) against which an entity's metric is tracked over time.
BNZ Properties	BNZ Properties means all properties, or lettable spaces within a property, leased or used by BNZ for its operations. This includes corporate offices, branches, customer connection hubs, Partners Centres and ATMs.
Carbon dioxide equivalent	The universal unit of measurement to indicate the global warming potential of each of the seven GHGs, expressed in terms of the global warming potential of one unit of carbon dioxide for 100 years. It is used to evaluate releasing (or avoiding releasing) any GHGs against a common basis.
Climate-related disclosure framework or Framework	Climate-related disclosure framework has the same meaning set out in section 9AA of the Financial Reporting Act 2013.
Climate-related opportunities	The potentially positive climate-related outcomes for an entity. Efforts to mitigate and adapt to climate change can produce opportunities for entities, such as through resource efficiency and cost savings, the adoption and utilisation of low-emissions energy sources, the development of new products and services, and building resilience along the value chain.
Climate-related risks	The potential negative impacts of climate change on an entity. See also the definitions of physical risks and transition risks.

Term	Definition
Climate-related scenario	A plausible, challenging description of how the future may develop based on a coherent and internally consistent set of assumptions about key driving forces and relationships covering both physical and transition risks in an integrated manner. Climate-related scenarios are not intended to be probabilistic or predictive, or to identify the 'most likely' outcome(s) of climate change. They are intended to provide an opportunity for entities to develop their internal capacity to better understand and prepare for the uncertain future impacts of climate change.
Climate statements	Climate statements has the meaning set out in section 5 of the Financial Reporting Act 2013.
Climate Strategy	BNZ's Climate Strategy, finalised in June 2022.
CO2e	See **carbon dioxide equivalent.**
Emission factor	A factor allowing GHG emissions to be estimated from a unit of available activity data (for example, tonnes of fuel consumed, tonnes of product produced) and absolute GHG emissions.
Emissions intensity	Intensity ratios express GHG emissions impact per unit of physical activity or unit of economic output. A physical intensity ratio is suitable when aggregating or comparing across entities that have similar products. An economic intensity ratio is suitable when aggregating or comparing across entities that produce different products. A declining intensity ratio reflects a positive performance improvement. Intensity ratios are also often called normalised environmental impact data. Examples of intensity ratios include product emission intensity (for example, tonnes of GHG emissions per electricity generated); service intensity (for example, GHG emissions per function or service); and sales intensity (for example, emissions per sales).
EVIC (Enterprise Value Including Cash)	Enterprise Value Including Cash is the sum of the market capitalisation of ordinary shares at fiscal year-end, the market capitalisation of preferred shares at fiscal year-end, and the book values of total debt and minorities' interests.
Financial impacts	The translation of impacts into current or anticipated impacts on financial performance, financial position, and cash flows.

Term	Definition
FTE	Full-time equivalent (employee)
GHG	See **greenhouse gas**.
GHG Protocol	GHG Protocol supplies the world's most widely used greenhouse gas accounting standards.
Global warming potential	A factor describing the radiative forcing impact (degree of harm to the atmosphere) of one unit of a given GHG relative to one unit of carbon dioxide (CO2).
Governance body	A board, investment committee or equivalent body charged with governance.
Greenhouse gas	The greenhouse gases listed in the Kyoto Protocol: carbon dioxide (CO2); methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), nitrogen trifluoride (NF3), perfluorocarbons (PFCs), and sulphur hexafluoride (SF6).
Gross emissions	Emissions are the release of GHGs into the atmosphere. Gross emissions are total GHG emissions excluding any removals, and excluding any purchase, sale, or transfer of GHG emission offsets or allowances. Gross scope 2 emissions must be calculated using the location-based method.
GWP	See **global warming potential.**
ICAAP	BNZ's conditions of registration (as set by RBNZ) require it to have an internal capital adequacy assessment process (ICAAP) for assessing its overall capital adequacy in relation to risk profile and a strategy for maintaining adequate capital to support risks.
Intensity target	A target defined by a change in the ratio of emissions to a metric over time.
Inventory boundary	An inventory boundary identifies the gases, emissions sources, geographic area and time span, or other limitations, for relevant GHG emissions.
Management	Executive or senior management positions generally separate from the governance body.
MBIE data (or analysis)	A report (emissions exposure of workers, firms and regions) published by the Ministry of Business, Innovation & Employment Hīkina Whakatutuki (MBIE) in 2021 which analysed NZ industries on the basis of emissions intensity, ranging from low, moderate, moderately high to high.
NAB	National Australia Bank Limited ABN 12 004 044 937, BNZ's ultimate parent company.
OA	OA refers to the actual outstanding loan amount i.e. the value of the debt that the borrower owes to the lender (i.e., disbursed debt minus any repayments).

Term	Definition
PCAF	Partnership for Carbon Accounting Fundamentals.
Physical risks	Risks related to the physical impacts of climate change. Physical risks emanating from climate change can be event-driven (acute) such as increased severity of extreme weather events. They can also relate to longer-term shifts (chronic) in precipitation and temperature and increased variability in weather patterns, such as sea level rise.
Reporting period	The period covered by this Report or, as the context may require the prior comparable period. In this Report the reporting period is from 1 October 2021 to 30 September 2022 (FY22) and 1 October 2022 to 30 September 2023 (FY23), other than in relation to operational emissions which are presented for a July to June reporting period.
RBNZ	Reserve Bank of New Zealand – Te Pūtea Matua.
Scenario analysis	A process for systematically exploring the effects of a range of plausible future events under conditions of uncertainty. Engaging in this process helps an entity to identify its climate-related risks and opportunities and develop a better understanding of the resilience of its business model and strategy.
Scope 1	Direct GHG emissions from sources owned or controlled by the entity.
Scope 2	Indirect GHG emissions from consumption of purchased electricity, heat, or steam.
Scope 3	Other indirect GHG emissions not covered in scope 2 that occur in the value chain of the reporting entity, including upstream and downstream GHG emissions. Scope 3 categories are purchased goods and services, capital goods, fuel-related and energy-related activities, upstream transportation and distribution, waste generated in operations, business travel, employee commuting, upstream leased assets, downstream transportation and distribution, processing of sold products, use of sold products, end-of-life treatment of sold products, downstream leased assets, franchises, and investments.
Target Disclosure	BNZ's Net Zero Banking Alliance target disclosure, published in May 2023
TCE	Total Committed Exposure (TCE) refers to the total amount of irrevocable funding a BNZ customer can access at any time. For example, a customer may have $1 million outstanding to the bank, but we have a TCE to the customer of $2 million, meaning an additional $1 million can be borrowed by that customer if relevant conditions are met.
TCFD	Taskforce for Climate-Related Financial Disclosures.

Term	Definition
Transition plan	An aspect of an entity's overall strategy that describes an entity's targets, including any interim targets, and actions for its transition towards a low-emissions, climate-resilient future.
Transition risks	Risks related to the transition to a low-emissions, climate-resilient global and domestic economy, such as policy, legal, technology, market and reputation changes associated with the mitigation and adaptation requirements relating to climate change.
XRB	External Reporting Board, issuer of the Climate Standards.
Value chain	The full range of activities, resources, and relationships related to an entity's business model and the external environment in which it operates. A value chain encompasses the activities, resources, and relationships an entity uses and relies on to create its products or services from conception to delivery, consumption, and end of life. Relevant activities, resources, and relationships include those in an entity's operations, such as human resource; those along its supply, marketing, and distribution channels, such as materials and service sourcing and product and service sale and delivery; and the financing, geographical, geopolitical, and regulatory environments in which an entity operates.
2021 report	BNZ's November 2021 Climate Risk Disclosure Statement.
2022 Report	BNZ's Climate Report relating to the 2021 financial year, and environmental reporting year (July to June) issued in December 2022.

Appendix B – strategy methodology:

This appendix provides further information in relation to the methodologies applied for the analysis discussed in the Strategy section of this Report.

We are at an early stage of understanding climate-related impacts on BNZ, and the approach set out below does not cover all of the risks that may affect BNZ and/or its customers, nor have we yet assessed all of our risks using the same methodologies. There are significant limitations to our approach which are discussed below.

Methodology – physical risk

This Report builds upon the analysis described in the 2022 Report which disclosed the impacts of sea level rise and coastal inundation on industry-related loans for seven key sectors using FY21 data[26]. This Report discloses the financial impacts of sea level rise, coastal inundation, and pluvial and fluvial flooding on sectors in BNZ's Gross loans and advances to customers.

[26]Seven sectors, namely Agriculture – dairy; Agriculture – non-dairy; Power; Oil and Gas; Transport; Residential property; and Commercial real estate.

Climate models

BNZ has used climate change models to support its assessment of climate-related risks and opportunities. Climate models use sound scientific principles to show how GHG will drive physical environmental changes. We used CMIP6[27] climate model projections that show the potential exposure of physical risks under differing future temperatures.

The extent of underlying GHG emissions is based on a range of socio-economic futures, known as Shared Socioeconomic Pathways (SSP). SSPs show a range of potential global warming impacts over the coming century (Table 17). The results of these models are used by the Intergovernmental Panel on Climate Change (IPCC) and others.

It is important to note that climate models are projections, not predictions, of a future state and do not capture the full extent of physical hazards. Climate models are not linear, and are also independent of each other, which means that SSPs can show different exposures to physical risk over time. These differences can be linked to the global mean sea level change (embedded in the model) which is lower for the higher emissions pathway (SSP5-8.5) up to around 2030. After 2030, the global mean sea level change is higher for SSP5-8.5. For this reason, the results of our physical risk analysis will show slightly less exposure to extreme coastal inundation and fluvial/pluvial flooding in 2030 for the SSP5-8.5 climate model compared to the other two SSPs.

[27]The Coupled Model Intercomparison Project (CMIP) provides climate projections supported by climate science worldwide, and decision and policy-maker communities. CMIP is a project of the World Climate Research Programme, an organisation that coordinates and facilitates international climate research to develop, share, and apply the climate knowledge that contributes to societal well-being.

Table 17: Description of SSPs and associated CMIP6 annual mean surface air temperature anomalies (^{0}C)

Pathway (SSP number and corresponding RCP)^	SSP1-1.9	SSP2-4.5	SSP5-8.5
Change in °C for 2041-2060*	1.7°C (1.1 – 2.4°C)	2.1°C (1.5 – 3.0°C)	2.6°C (1.8 – 3.4°C)
Change in °C for 2081-2100*	1.5°C (1.0 – 2.2°C)	2.9°C (2.1 – 4.0°C)	4.8°C (3.6 – 6.5°C)
Description	Sustainability – Taking the Green Road	Middle of the Road	Fossil-fuelled Development – Taking the Highway
Summary of SSP narratives[r]	SSP1: The world shifts gradually, but pervasively, toward a more sustainable path, emphasizing more inclusive development that respects perceived environmental boundaries. Management of the global commons slowly improves, educational and health investments accelerate the demographic transition, and the emphasis on economic growth shifts toward a broader emphasis on human well-being. Driven by an increasing commitment to achieving development goals, inequality is reduced both across and within countries. Consumption is oriented toward low material growth and lower resource and energy intensity.	SSP2: The world follows a path in which social, economic, and technological trends do not shift markedly from historical patterns. Development and income growth proceeds unevenly, with some countries making relatively good progress while others fall short of expectations. Global and national institutions work toward but make slow progress in achieving sustainable development goals. Environmental systems experience degradation, although there are some improvements and overall the intensity of resource and energy use declines. Global population growth is moderate and levels off in the second half of the century. Income inequality persists or improves only slowly and challenges to reducing vulnerability to societal and environmental changes remain.	SSP5: This world places increasing faith in competitive markets, innovation, and participatory societies to produce rapid technological progress and development of human capital as the path to sustainable development. Global markets are increasingly integrated. There are also strong investments in health, education, and institutions to enhance human and social capital. At the same time, the push for economic and social development is coupled with the exploitation of abundant fossil fuel resources and the adoption of resource and energy intensive lifestyles around the world. All these factors lead to rapid growth of the global economy, while global population peaks and declines in the 21st century. Local environmental problems like air pollution are successfully managed. There is faith in the ability to effectively manage social and ecological systems, including by geo-engineering if necessary.
Challenges	Low challenges to mitigation and adaptation.	Medium challenges to mitigation and adaptation.	High challenges to mitigation, low challenges to adaptation.

* Denotes the change in annual mean surface air temperature. Displayed are multi-model averages and, in parentheses, the 5–95% ranges, for selected time periods and SSPs. Change is in annual mean surface air temperature relative to 1850–1900 (pre-industrial levels).

^ In climate models, the number following “SSP” represents a specific “warming level.” In simple terms the higher the number the higher the global warming. It should be noted that the SSPs do not include the impacts of climate change in the models (i.e. they describe projected socio-economic changes, but do not incorporate physical impacts of climate change and associated impacts within the socio-economic system).

Understanding the percentiles of climate models

Although all climate models use well-established scientific principles, each model uses slightly different approaches that, in turn, produce different outputs. These outputs can be represented using percentiles which denote the threshold of a collection of model results. The 50th percentile is used to show the middle value of the model results and the 99th percentile indicates the potential outlier exposure. For example, Figure 23 shows that the TCE of BNZ properties exposed to extreme coastal inundation in 2050 can range from $2,531M (5th percentile) through to an outlier 99th percentile of $4,078M (under SSP5-8.5 climate model).

As there is no such thing as "the best model," we internally analysed four percentiles (5th, 50th, 95th and 99th) for each climate model. Exploring this range allows us to internally understand the bounds of the model outputs and the extent of BNZ and our customers' exposure to physical risks. However, the results of climate models generate a large range of data. For ease of readability, we have reported the 99th percentile of each climate model as this highlights the outlier model risk of BNZ's potential exposure to physical risks.

It should be noted that the degree to which the collateral or security for a loan is affected will be determined by the size of the land parcel, proximity to lifeline utilities, and the ability for adaptation actions to be applied. The cascading impacts of physical risks can also lead to broader transition risks (e.g. market demand and regulatory changes).

Approach to physical risk analysis

BNZ adopted the overlay analysis method which uses the spatial layer of a physical risk (e.g. flooding) and overlays it with a layer of the parcels to determine exposed sites. BNZ used CLIMsystems to perform both the modelling of the climate data and the overlay analysis. The parcel approach was also chosen to align with the requirements of the RBNZ Climate Stress Test for 2023.

We have chosen to focus on reporting the mean inundation depth because without site-specific information (e.g. building footprint), modelling the mean inundation depth across a property can provide a more uniform representation of the potential flood exposure, compared to focusing on isolated and/or extreme depths.

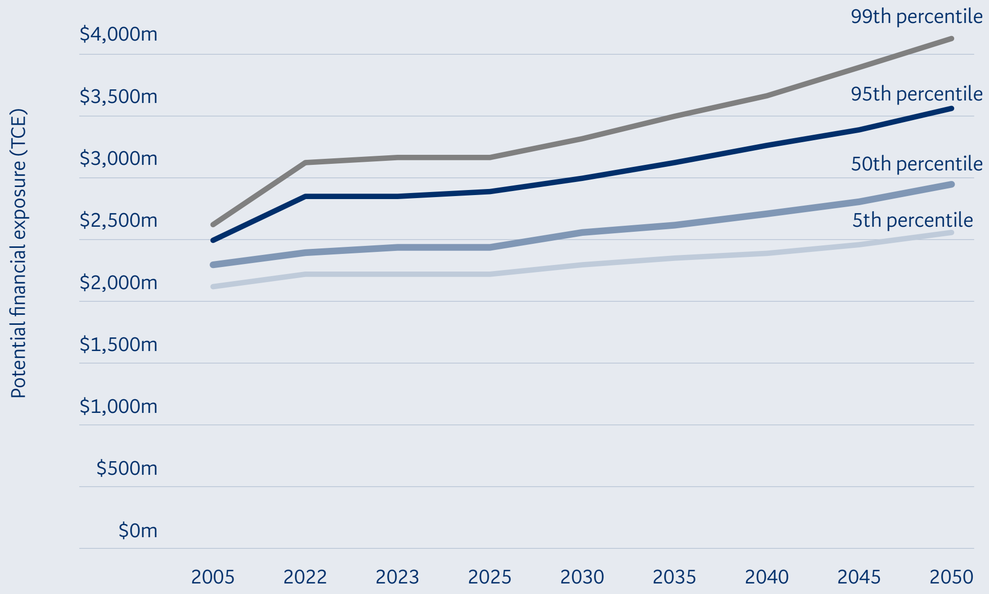
BNZ only considered the exposure of its customers to certain physical climate-related hazards (e.g. sea level rise inundation). This means that the physical risk analysis does not disclose the full extent of potential impacts to BNZ and its value chain. In addition, sea level rise modelling applied different resolution scales, as available.

The physical risk analysis does not consider:

- fluvial/pluvial flooding analysis has been reported for the Real estate – mortgage and Property, business, and personal services sectors only
- velocity of water and debris within the flood (e.g. forestry slash) was not included in the modelling for extreme coastal inundation and fluvial/pluvial flooding
- individual building characteristics or potential building damage
- existing or potential adaptation options available to each site
- vulnerability, adaptive capacity or sensitivity of customers
- broader market or macroeconomic forces, such as future values of properties, and whether properties are likely to maintain insurability
- the confluence of hazards
- compounding and confluence events, such as a storm surge coinciding with a fluvial or pluvial flooding event
- other limitations associated with third party modelling.

All the above limitations, if known, would provide more granular insights in relation to the risks analysed and discussed.

Figure 23: Difference in exposure to coastal inundation under different percentiles of the SSP5 8.5 climate model



A key limitation is that the climate modelling of physical risk variables was performed using the area of the parcel of land which may not reflect the actual building footprint on the property. The assumption is that if the parcel is exposed, then the building will also be exposed, however this will not always be the case, depending on where that property is located on the land parcel. A further limitation is that the analysis is a non-amortised, static (i.e. assuming no increases or decreases) view of TCE of Gross loans and advances to customers.

Methodology – transition risk

For the transition risk analysis, BNZ has used both quantitative and qualitative methods to understand its current and anticipated impacts from transition risks. We have identified high emissions-intensive industries which can show which sectors are most exposed to current transition risk. Using research and academic literature, we have identified current impacts for BNZ and analysed the anticipated impacts and opportunities from transition risks for each portfolio.

Estimating high emissions-intensive industries

In 2021, MBIE analysed and categorised New Zealand's industries into High, Medium high, Medium, and Low carbon intensity. This analysis assumes that high emission intensive industries are more likely to be exposed to transition risks, such as sensitivity to carbon price or regulatory change, than low emission-intensive industries.

The MBIE analysis states "that firms in industries that are more emissions-intensive are most likely to have to undergo significant changes in the way that they operate in response to pressures to reduce emissions." The risk associated with some of the emissions-intensive industries may be increased if they are affected by the (Climate Change Response Late Penalties and Industrial Allocation Amendment Bill) where a review of industrial allocations of New Zealand Emissions Trading Scheme credits may take place.

For both FY22 and FY23, we have mapped the TCE of Gross loans and advances to customers against the MBIE categorisation of emissions intensity. Only industry-related loans[28], representing approximately 47% of BNZ's TCE of Gross loans and advances to customers, are captured for this analysis.

The limitations of our transition risk analysis are that:

- Loans with no industry classification (i.e. consumer lending comprised in Real estate – mortgage and personal lending) have been excluded.
- It does not reflect an analysis of the full scope of transition risk (e.g., market, technology, and other risks) but instead reflects exposure to fossil fuels.
- The underlying data in the MBIE emissions intensity dataset referred to above is from 2015.
- It does not reflect a specific sector or individual customer's ability to respond to transition risk i.e. the nature, speed, or scale of their response to the impact.
- The emissions intensity of an industry is not necessarily a predictor of the impacts some sectors will face in the transition to a lower-emissions economy.
- Some sectors may be able to adapt more easily than others and should face lower abatement costs.
- We have not assessed the impacts that different industries may experience over the course of transition - future Government policy decisions will be a key factor.
- We have not assessed the costs associated with physical risks together with these transition risks.
- We have not yet conducted analysis of the financial impact of our transition risk analysis on BNZ's portfolio.

[28]Loans with an Australian and New Zealand Standard Industrial Classification (ANZSIC) code.

Appendix C – GHG emissions methodology, key assumptions, and limitations

We measure and manage our GHG emissions (excluding financed emissions) using ESP CSR carbon reporting software. Our GHG emissions are based on an operational control consolidation approach and our organisational boundaries were set in line with the methodology and guidance of the GHG Protocol. Where available, GHG emissions (excluding financed emissions) are based on emission factors sourced from Ministry for the Environment NZ (MfE), Measuring Emissions: A Guide for Organisations (2022 and 2023)[s,t] and the Department for Business, Energy & Industrial Strategy's (DBEIS) Greenhouse gas reporting: conversion factors 2022[u]. Otherwise emission factors have been sourced from Toitū Envirocare for upstream purchased electricity and fuels; Paper Australia Climate Active Public Disclosure Statement[v] and EPA Victoria Greenhouse Gas Inventory and Management Plan 2020 to 2021[w] for purchased paper emission factors; EN 16258, IEA, World Bank and DBEIS for DHL customer-specific courier emissions reporting; and NZ Courier and NZ Post Toitū Envirocare verified supplier specific emission factors. The data sources and methods specified in the table below are subject to uncertainties. It is assumed that invoice data is complete but uncertainties still exist especially in instances where activity data is accrued, estimated based on $ spend data or extrapolated.

Table 18: GHG emission source methods

Scope	Emission sources	Description	Units	Data sources
1	Mobile combustion emissions	Emissions from fuel consumed in owned or leased vehicle that are within BNZ's inventory boundaries.	L (fuel cards) $spend % (non- fuel cards)	Fuel card consumption reports and spend fuel reports for non-fuel card fuel consumption.
	Fugitive emissions	Refrigeration and air conditioning leakage over the operational life of the equipment.	Kg	Contractor and Facility Manager HVAC maintenance reports. Refrigeration unit plates and manufacturing information.
	Stationary combustion	Emissions from the consumption of natural gas and diesel across BNZ properties.	kWh (gas) L (fuel)	Diesel and natural gas invoices and consumption reports.
2	Purchased energy onsite	Emissions from the electricity used at retail and corporate properties including vehicle charging stations.	kWh	Invoices from electricity retailers and landlords. Balance date accruals.
3	Business travel	Indirect emissions from flights, taxi, rental car, business use of private vehicles, and hotel stays by employees for business purposes.	pkm (flights), $spend (taxis), Kms (rental cars, business use of private vehicles), $spend % (non-preferred rental car hire), nights (hotel stays)	Flight travel provider and invoice reports and invoices. Rental car preferred supplier reports and BNZ spend reports for non-preferred supplier rental car hire. BNZ expense claim reports. Hotel stays travel provider transaction reports and estimation reports for hotel stays not booked via travel provider.
	Purchased electricity – offsite	Indirect emissions from electricity used by BNZ in external supplier data centres.	kWh	Data Centre provider consumption reports.
	Upstream fuel and energy emissions	Indirect emissions from transmission and distribution losses and upstream purchased fuel and electricity used by BNZ's fleet and properties.	kWh	Invoices from landlords/retailers.

Scope	Emission Sources	Description	Units	Data sources
3	Office paper & paper statements	Indirect emissions from the purchase of statement and office paper used in BNZ's operations and retail branches.	Kg	Paper supplier transaction reports
	Base building & Fleet Electricity	Indirect emissions from BNZ's remote ATMs & offsite fleet electricity consumption.	kWh (remote ATMs and pool electric vehicles EVs) kms (non pool plug in hybrid electric vehicles)	BNZ reports (number of ATMs), ATM provider (average daily consumption per ATM type) Fleet provider reports
	Courier, postage, freight	Indirect emissions from use of courier, postage, and cash in transit services.	tkm, tCO2e , number of letters/ parcels, L (fuel)	Courier and postage supplier reports. Cash-in-transit supplier fuel consumption reports and BNZ's revenue-based share for shared services.
	Waste	Indirect emissions from waste to landfill, and organic waste from BNZ properties.	Kg	Cleaning contractor waste reports containing weighed waste per property and waste stream
	Water and wastewater	Indirect emissions from the use of water and discharge of wastewater from BNZ retail and corporate properties.	kL	In-sample sites - water invoices and accruals Out of sample sites – extrapolation based on in-sample usage and property areas; Facility Manager harvested water reports
	Working from home emissions	Indirect emissions from employees working from home.	Employee per day	BNZ remote access software report
	Employee commuting	Indirect emissions from employees commuting to BNZ workplaces.	tCO2e	Abley CarbonWise reports, actual survey responses and extrapolation per site for survey non-respondents

Appendix D – sector-level targets methodology summary:

Where possible, our decarbonisation targets have been prepared to align with the UNEP FI Guidelines for target setting under the NZBA. A summary of our sector target methodology is outlined in Table 19 below.

There are uncertainties and limitations inherent in this information and whether we are able to meet our targets will depend on factors out of our control, such as governmental policy, regulatory and economic factors, as well as the actions of our customers. We have been constrained by available data and the focus has been to incorporate the most material sources of emissions for each sector in both our target pathway and associated baseline emissions. Key sector target limitations are the inclusion of only upstream oil and gas industries in the Oil and Gas sector target; not including scope 3 emissions in the Electricity gas and water - power generation sector target and including only scope 1 biological emissions in the Agriculture - dairy sector target. A detailed description of each target, including the industry activities covered by the targets, key assumptions, and the reference scenario used is provided in the Target Disclosure[q].

Table 19: Sector-level targets

	Emissions measurements				Sector inclusions			Sector-level target setting				
Sector	Emissions scopes	Target type	Target amount and year	Financing Scope	ANZSIC code	ANZSIC description	Value chain	Emissions scope	Metric	Reference scenario	Baseline year	Baseline
Oil and gas	Scope 1, 2 and 3	Absolute emissions (tCO2e)	21% reduction by 2030	Total Committed Exposure (TCE) Gross loans and advances to customers	120001	Gas, Natural Extraction	Upstream	Scope 1, 2 and 3	tCO2e	IEA NZE 2050 (May 2021)	2021	1.14 MtCO2e
					120002	L.N.G Production At Wellhead	Upstream					
					120003	Liquefied Petroleum Gas Production (Not At Refineries)	Upstream					
					120004	Natural Gas Separation At The Wellhead	Upstream					
					120005	Oil Shale Mining	Upstream					
					120099	Oil And Gas Extraction	Upstream					
					150002	Oil and Gas Field Services	Upstream					
					151101	Petroleum Exploration (Own Account)	Upstream					
					151201	Natural Gas Exploration On Contract	Upstream					
					151202	Petroleum Exploration On Contract	Upstream					
					151299	Petroleum Exploration Services	Upstream					
					152001	Contract Mining Services	Upstream					
					152002	Oil and Gas Field Services	Upstream					
					152099	Other Mining Services	Upstream					

	Emissions measurements				Sector inclusions			Sector-level target setting				
Sector	Emissions scopes	Target type	Target amount and year	Financing Scope	ANZSIC code	ANZSIC description	Value chain	Emissions scope	Metric	Reference scenario	Baseline year	Baseline
Electricity, gas and water - power generation	Scope 1 and 2	Emissions intensity (kgCO2e/ MWh)	74% reduction by 2030	Total Committed Exposure (TCE) Gross loans and advances to customers	361002	Electricity Generation	n/a	Scope 1 and 2	kg CO2e/ MWh	CCC Tailwinds scenario (May 2021)	2021	178 kgCO2/ MWh*
					361004	Hydroelectric Power Generation	n/a					
					361007	Electricity Generation using Coal	n/a					
					361008	Electricity Generation using Gas	n/a					
					361010	Wind Farms	n/a					
					361011	Renewable Energy	n/a					
Agriculture - dairy	Scope 1 - biological emissions	Biological emissions intensity kgCO2e/ kg milk solids (kgCO2e/ kgMS)	11% reduction by 2030	Total Committed Exposure (TCE) Gross loans and advances to customers	13001	Dairy Cattle Farming (pasture not irrigated)	n/a	Scope 1 - biological emissions	kg CO2e/ kgMS	CCC Demonstration Pathway (May 2021)	2022	11.05 kgCO2e/ kgMS
					13002	Dairy Cattle Farming (irrigated pasture)	n/a					
					13003	Raw Cattle Milk Production	n/a					
					13004	Dairy Cattle Sharefarmer (pasture not irrigated pasture)	n/a					
					13005	Dairy Cattle Sharefarmer (irrigated pasture)	n/a					
					13006	Dairy Cattle Sharefarming (Land Owner-irrigated pasture)	n/a					
					13007	Dairy Cattle Sharefarming (Land Owner-pasture no irrigated)	n/a					
Coal	n/a	n/a	$0 by 2030 (TCE)	Total Committed Exposure (TCE) Gross loans and advances to customers (excludes bonds or guarantees associated with environmental rehabilitation)	110101	Black Coal Mining - Coking	n/a	n/a	$TCE	n/a	2021	$4.32 million**
					110102	Black Coal Mining - Steaming	n/a					
					110201	Brown Coal Mining	n/a					
					110202	Lignite Mining	n/a					
					110203	Peat Cutting	n/a					

*Baseline restated due to better quality data becoming available and a conglomerate customer methodology enhancement, making emissions per sector more accurate.
**Baseline restated to reflect only irrevocable lending commitments (TCE).

Appendix E – financed emissions methodology, key assumptions, and limitations:

Measurement

BNZ's financed emission calculations are aligned with the PCAF standard, where feasible. Reported financed emissions are estimates only based on an attributed proportion of customer emissions. We have measured financed emissions using the following PCAF asset class options and calculations.

The sources for the PCAF asset class options described in Table 20 are:

- **Business loans Option 1a,1b, 2b,3b:** PCAF (2022). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second Edition, Table 10.1-2 (PCAF 2022 2nd Edition).
- **Business loans Option 3:** PCAF (2022) 2nd Edition, page 72.
- **Real estate mortgages Option 3b:** PCAF (2022) 2nd Edition, Table 10.1-5.

Table 20: PCAF asset class options and calculations

$_c$ = customer (borrower), $_b$ = building, $_e$ = energy source, $_s$ = sector

Asset Class	Option	Calculations using outstanding amount (OA)	Calculations using total committed exposure (TCE)	PCAF data quality score
Business loans	1a. Customer verified emissions data	$\sum_c \frac{\text{Outstanding amount}_c}{\text{Total equity + debt}_c} \times \text{Verified company emissions}_c$ **For business loans to listed companies:** $\sum_c \frac{\text{Outstanding amount}_c}{\text{EVIC}_c} \times \text{Verified company emissions}_c$	$\sum_c \frac{\text{Total committed exposure}_c}{\text{Total equity + debt}_c} \times \text{Verified company emissions}_c$ **For business loans to listed companies:** $\sum_c \frac{\text{Total committed exposure}_c}{\text{EVIC}_c} \times \text{Verified company emissions}_c$	1
Business loans	1b. Customer unverified emissions data	$\sum_c \frac{\text{Outstanding amount}_c}{\text{Total equity + debt}_c} \times \text{Unverified company emissions}_c$ **For business loans to listed companies:** $\sum_c \frac{\text{Outstanding amount}_c}{\text{EVIC}_c} \times \text{Unverified company emissions}_c$	$\sum_c \frac{\text{Total committed exposure}_c}{\text{Total equity + debt}_c} \times \text{Unverified company emissions}_c$ **For business loans to listed companies:** $\sum_c \frac{\text{Total committed exposure}_c}{\text{EVIC}_c} \times \text{Unverified company emissions}_c$	2
Business loans	2b. Customer activity based emissions data	$\sum_c \frac{\text{Outstanding amount}_c}{\text{Total assets}} \times \text{Production}_c \times \text{Emission factor}$	$\sum_c \frac{\text{Total committed exposure}_c}{\text{Total assets}} \times \text{Production}_c \times \text{Emission factor}$	3
Real estate mortgages	2b. Customer house energy consumption using floor areas & regional energy consumption	$\sum_{b,e} \frac{\text{Outstanding amount}_b}{\text{Property value at origination}_b} \times \text{Estimated energy consumption from statistics}_{b,e} \times \text{Floor area}_b \times \text{Average emission factor}_e$	$\sum_{b,e} \frac{\text{Total committed exposure}_c}{\text{Property value at origination}_b} \times \text{Estimated energy consumption from statistics}_{b,e} \times \text{floor area}_b \times \text{Average emission factor}_e$	4
Business loans	3b. Sector emissions data	$\sum_c \text{Outstanding amount}_c \times \frac{\text{GHG emissions}_s}{\text{Assets}_s}$	$\sum_c \text{Total committed exposure}_c \times \frac{\text{GHG emissions}_s}{\text{Assets}_s}$	5
Business loans	3. Customer extrapolation	$\sum_c \frac{\text{Financed emissions in-sample}_c}{\text{OA in-sample}_c\ \%} \times 100\%\ \text{total OA}_c$	$\sum_c \frac{\text{Financed emissions in-sample}_c}{\text{TCE in-sample}_c\ \%} \times 100\%\ \text{total TCE}$	5

We have applied PCAF business loan measurement options to all business lending and will endeavour to refine our measurements over time by applying other PCAF asset class measurements such as commercial real estate and motor vehicle loans. As required by PCAF for business loan measurement options 1a, 1b and 2b, BNZ's share of customer emissions is proportional to our lending (TCE or OA) relative to either the customers total equity plus debt or enterprise value including cash (EVIC). Reporting emissions using OA in the attribution factor ensures 100% attribution of emissions across a customers' equity and debt providers. However, using TCE in the attribution factor will result in greater than 100% attribution of customer emissions between equity and debt providers. For business loans to unlisted customers in the dairy sector (option 2b) total equity plus debt data is not currently available and so total assets is used as a proxy, as permitted by PCAF. For business loan options 1a and 1b, when using EVIC for listed customers, calculated financed emissions might change year on year because of fluctuations in market prices.

The use of region- or sector-specific average values or extrapolation (emissions and/or financial data) makes financed emission calculations more uncertain than those based on customer-specific data, as the data depends on assumptions and approximations. The extrapolation of company level data is contemplated by PCAF as an alternative for option 3 economic activity-based emissions and is applied for Agriculture - Dairy sector calculations because of the nationwide spread of customers and this is considered a superior proxy to the use of generic sector-based averages. The use of option 2b for the real estate mortgage asset class uses regional average energy consumption and option 3b for business loans uses sector average emissions. PCAF does not require mortgages used to construct or renovate a house to be measured by option 2b, however we measure all real estate mortgages under this option to align with our financial reporting and reporting to the RBNZ.

Sectors and conglomerate customers

We have reported financed emissions by sector as permitted by PCAF. Except for identified conglomerate customers, the allocation of customers to sectors is based on their assigned ANZSIC codes and reported financed emissions could be higher or lower if these codes are not correctly assigned. ANZSIC code allocation by BNZ has been reviewed for the Oil and Gas, Electricity, gas, and water - power generation, and Agriculture - dairy sectors with no material errors found. We have assumed that customer ANZSIC codes have been correctly assigned for all other reported sectors.

Customers may have business lines spanning more than one sector. Customers that derive revenue above defined thresholds of 20% in the Oil and Gas and 5% in the Electricity, gas, and water - power generation sectors are deemed to be conglomerate customers and are apportioned to those sectors for financed emissions calculations. This provides a more accurate reflection of emissions between reported sectors where good quality customer emissions data is available. Where this is not the case and emissions are allocated among sectors based on revenue share, emissions per sector may be under or overstated. Customers not identified as conglomerate customers but with exposure to more than one sector are assigned to sectors based on their ANZSIC codes and consequently the estimate of their emissions may be under or overstated.

Emission scopes and double counting

PCAF requires the reporting of customers scope 3 emissions for the oil and gas and mining sectors from 2021 and transportation, construction, buildings, materials, and industrial sectors from 2023. The coverage and reliability of customer scope 3 data varies greatly, and customers may or may not currently measure and report their own scope 3 emissions. The scope 3 emissions categories reported to us by customers are therefore highly variable. We have captured scope 3 customer emissions for Oil and Gas, Electricity, gas, and water - power generation, and Agriculture - dairy sectors where available. Scope 2 and 3 emissions are not reported for BNZ's other sector based financed emissions reporting this year.

PCAF stipulates "follow the money" as a key tenet for GHG accounting of financial assets. This means that "the money should be followed as far as possible to understand and account for the climate impact of lending and investments". BNZ follows this approach but we note the possibility that this can lead to double counting of financed emissions between reporting entities if financed emissions are reported by a BNZ customer that BNZ in turn reports financed emissions on.

Appendix F – table of figures:

Appendix G – table of tables:

Appendix H – references:

[a]As at 30 June 2023, RBNZ Bank Financial Strength Dashboard, Key metric summary (rbnz.govt.nz)

[b]Financials - BNZ

[c]nestle-net-zero-roadmap-en.pdf

[d]Climate Scenario Narratives for the Banking Sector - Final report - New Zealand Banking Association, page 8 provides a summary of scenario dimensions

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