Climate Report

December 2022

Disclaimer

This report contains BNZ's current assessment of the future climate-related risks and opportunities affecting parts of its business, 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. Forward-looking statements and commitments are based on BNZ's reasonable understanding as at 19 December 2022 but incorporate limitations and assumptions that mean that future performance and actions may differ materially from this report.

BNZ has set out the basis, and limitations, of its analysis in this report but reserves the right to revisit its assumptions and assessments as it continuously develops its understanding of these risks and its response to climate change. Limitations are identified in particular on pages 2, 9, 12, 13 and 22. If BNZ changes its assessment of the future climate-related risks and opportunities, it will not update this report, but will instead incorporate updates in future reports.

This report provides early and indicative assessments that will improve over time as relevant data, including greenhouse gas emissions data, climate risk data, and customer data becomes available to BNZ. Similarly, climate-related risk modelling and metrics are subject to a number of methodological and data-related limitations. As a result, readers should make their own assessments and not place undue reliance on this report. While BNZ has taken all due care in preparing this report, it is necessarily limited in coverage and a summary only. BNZ makes no representation as to its accuracy, completeness or reliability. BNZ expressly disclaims all liability for any loss (direct, indirect, consequential or otherwise) arising from the use of this report.

Forward-looking statements may also be made – verbally and in writing – by BNZ's directors or management in connection with this document. Such statements are subject to the same limitations, qualifications and assumptions set out in this document.

The report is provided in order 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.

Overview

In 2021, we committed to reporting in line with the Taskforce for Climate-related Financial Disclosures (TCFD). In October 2021, the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act was passed, requiring registered banks, among others, to issue climate disclosures from FY2024 in compliance with the climate standards being developed by the External Reporting Board (XRB). This Climate Report is a step towards ensuring we meet the disclosure requirements from FY2024.

In the financial year to 30 September 2022 (FY2022), we have focused on baselining our climate risk exposure using available data, strengthening governance and core frameworks, for example our Climate Risk Management Framework, and formalising the strategic focus for managing climate risk at BNZ.

All dollar figures are at 30 September 2021. We used financials from 30 September 2021 as a basis for analysis to give us time to learn and undertake analysis required for the risk assessment, scenario testing and financed emissions.

In FY2022, we have analysed, using available data to 30 September 2021:

- **68% of our total portfolio's Exposure at Default (EAD) for transition risk and two core physical risks (sea-level rise and extreme coastal inundation); and**
- **financed emissions for two priority emitting sectors, Oil and Gas and Power (which includes power generation, transmission and distribution) acknowledging this only covers 0.6% of our total outstanding loan amounts for this period.**

Transition Risk

This report assesses the transition risk across seven portfolios (Agriculture – Dairy, Agriculture – Non-Dairy, Transport, Power, Oil and Gas, Commercial Real Estate, and Residential Real Estate). These are the "Assessed Portfolios" and cover 68% of BNZ's total lending. Exposure to BNZ is measured as EAD, being the total amount the bank is exposed to if a loan defaults, and is a key risk measure for BNZ. This analysis can be found at page 9 – 10.

In FY2022 we baselined the transition risk exposure in BNZ's Assessed Portfolios (excluding Residential Property) by identifying the value of EAD that was in emissions-intensive industries and, therefore, potentially most exposed to transition risk (see page 9).

We have covered transition risk to the residential loan portfolio qualitatively in FY2022.

In the 2023 financial year (FY2023), we expect to:

- work to quantify transition risk and its financial impact on the Assessed Portfolios;
- consider the adaptive capacity of the Assessed Portfolios, which has not been taken into account in FY2022;
- expand the analysis to cover a greater proportion of the total portfolio; and
- identify and apply climate scenarios for transition risk following the completion of the development of climate scenarios for the New Zealand financial sector currently underway through the New Zealand Bankers' Association scenario development workstream.

Physical Risk

We have considered two physical risks in this Climate Report – sea-level rise and extreme coastal inundation. We are disclosing the impacted dollar value of properties within the Assessed Portfolios at 2030 and 2055. This analysis can be found at page 13.

We have used two scenarios: a 1.5°C scenario; and a high-end scenario of global warming above 4°C.

There are many more physical risks which will have a financial impact on our portfolio. These risks will also layer together, with cascading risks and impacts. We expect to continue to monitor and analyse the physical risks that may be material to our business and expect to expand our analysis to address additional physical risks, including drought and flood risk, in future reports.

Emissions

Operational emissions[1] for 2022 reduced by 56% from our 2019 baseline. We are continually working to improve our scope and measurement of emissions. In FY2022 we have extended our scope 3 supplier emissions to include transport and logistics services to BNZ. This analysis can be found at page 20.

We have begun to quantify our financed emissions. We have assessed the Power and Oil and Gas portfolios. This covers 0.6% of our total outstanding amount of loans to customers or 1.1% of total committed exposure as at 30 September 2021. Further detail can be found at page 21. Extending scope, portfolios, and data quality scores will be areas of focus for improvement.

1. Operational emissions include emissions that BNZ has the ability to influence via its operational policies. Operational emissions are separate from financed emissions.

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Overview continued

Transition assessments

Our vision is “to accelerate the just transition to a net zero emissions economy, one that supports the regeneration of the natural environment and builds climate resilience”. One of our four key strategic objectives is to “support our customers to transition to low-emissions, resilient business models”. In FY2022, we have completed transition assessments for 50 of our highest-emitting customers to identify opportunities to finance their transition.

Key limitations

Climate-related data, including transition and physical risk impact data, and GHG emissions data from customers (particularly Scope 3 emissions data, continues to be challenging to access.

The quantum of data that needs to be accessed and combined to assess and report on physical and transition risk, as well as financed emissions, requires a significant investment in platforms, data sharing agreements and modelling expertise to achieve assurable and auditable future-focused climate analysis and reporting. We are making that investment.

Future/next steps

The strengthening of governance, strategy and risk management, combined with our baseline assessment, provides a strong foundation to adopt data-driven climate management across our portfolio. We will now take steps to extend our analysis from 68% of EAD to total EAD as well as continually adding physical risk types to our assessments and broadening our analysis of transition risk.

Opportunities abound as a major financier in Aotearoa New Zealand. The baselining we have undertaken provides clarity on where the opportunities are to finance the decarbonisation of our portfolio, work with customers to increase awareness of transition risks, and improve the climate resilience of our customer’s physical assets.

Governance

Board

The BNZ Board oversees BNZ's Climate Strategy. The Board has overall accountability 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 oversees:

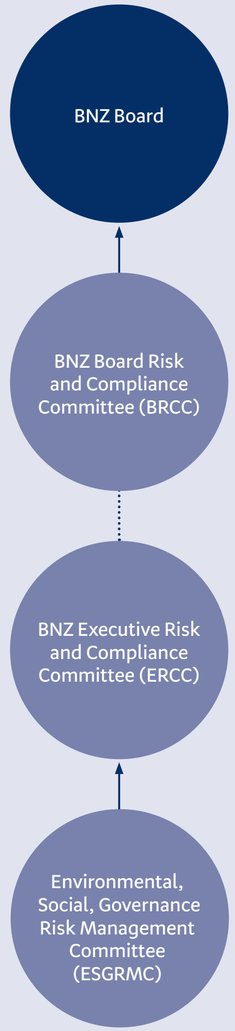
- BNZ's overarching Risk Management Strategy, which details material risk categories and risk management practices, including climate-related risk; and
- BNZ's Risk Appetite Statement for all material risk categories, which includes climate-related risk within sustainability risk.

The diagram (right) shows how information flows to the Board. The Board Risk and Compliance Committee (BRCC) meets regularly and has primary responsibility for climate risk management. It receives regular reporting on climate-related risks and opportunities (via the BNZ Chief Risk Officer's (CRO) Report, regulatory stress-test results and targeted climate risk reporting); how we are tracking against climate-related risk appetite settings; and makes recommendations to the Board, where required. The BRCC's assessment of climate-related risk is guided by our Risk Appetite Statement, Risk Management Strategy, and additional specific risk management practices, policies, frameworks and processes.

In 2022 the Board completed focus sessions on Environment, Social and Governance (ESG) risk, including climate, to ensure climate-related risks and opportunities are appropriately considered and incorporated into strategic decisions. The Board and Executive have access to specific expertise, when required, and to a specifically developed, self-managed climate governance training programme addressing:

- climate-related obligations and accountability;
- bank and financial sector climate-related performance, reporting, disclosure, risks and opportunities;
- climate science, policy, metrics, targets, strategy and ambitions; and
- climate leadership and driving decarbonisation in our portfolios.

Figure 1: BNZ governance structure for climate-related risks and opportunities



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Goverance continued

BNZ Subsidiaries

BNZ Investment Services Limited (BNZISL) is the manager of BNZ's Managed Investment Schemes including the BNZ KiwiSaver scheme. BNZISL will be required to report on GHG emissions in relation to those schemes from FY2024. Operational greenhouse gas emissions arising from the BNZISL operating entity are included within this disclosure as BNZISL is a subsidiary of BNZ.

BNZ Executive

The BNZ CEO has delegated authority from the Board for the bank's management of climate-related risk and opportunities in accordance with BNZ's Climate Strategy. Day-to-day management of risks and opportunities within specific business units is delegated to Executive Team members.

The Executive Risk and Compliance Committee (ERCC) is the key management oversight body responsible for management of climate risk. All Executive Team members sit on the ERCC. The ERCC sets BNZ's overall response to climate change in accordance with BNZ's Climate Strategy, and holds responsibility for BNZ's internal and external climate-related targets and commitments. At a customer level, the ERCC sets the BNZ's appetite to onboard and lend to customers exposed to climate-related risks, and approves position statements for material sectors, including emissions-intensive industries. The ERCC receives regular ESG reporting on how BNZ is integrating climate-related impacts into its business, as well as progress updates against its external commitments. Reporting is also provided via the Risk Appetite Settings (RAS) dashboard.

The Environmental, Social, Governance Risk Management Committee (ESGRMC) is a sub-committee of the ERCC responsible for delivery and management of, and reporting on, targets, commitments and strategic initiatives under BNZ's Climate Strategy as well as proposing climate-related targets and metrics to the ERCC for adoption. Key Executive Team direct reports from each business unit sit on the ESGRMC.

Specific responsibilities sit with the following BNZ Executive Team members:

- The BNZ's CRO is responsible for the BNZ's Climate Risk Management Framework. The CRO also produces a monthly report for the ERCC which includes sustainability risk.
- The Executive, Commercial Services and Responsible Business is responsible for:
  - the preparation and publication of climate-related reporting;
  - BNZ's Climate Strategy and the development of overall organisational appetite in relation to lending to, and onboarding, customers impacted by climate change and the BNZ's overall response to climate change;
  - the BNZ Sustainable Finance Framework; and
  - the development of position statements in regard to sectors that are materially impacted by climate.
- The Executive, Customer, Products and Services is responsible for product development in relation to sustainability and, specifically, climate.
- The Chief Customer Officers for Corporate and Institutional Banking and Partnership Banking are responsible for working with BNZ's business and personal customers to manage climate risk, reduce emissions and deliver sustainable finance.
- The Executive, Operational Excellence is responsible for managing climate risk and reducing emissions in BNZ's operations and with its suppliers.

Strategy

We have been developing and integrating our approach to managing and identifying climate-related risks, together with opportunities to accelerate the just transition to a net zero emissions economy. In FY2022, we have developed our Climate Strategy, enhanced our governance structure, and improved integration of climate and broader ESG issues into our core risk management policies and processes. We will continue building on these.

This is critical to ensure capital is deployed to the right parts of the economy to tackle both physical and transition risk and accelerate the transition to a low-emissions, climate-resilient economy.

Climate Strategy and transition planning

The kaitiakitanga pillar of the Sustainability Strategy and Climate Strategy hold 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.

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Our key strategic climate objectives

01. **Transition our investment and lending portfolios to net zero emissions by 2050**, bringing together commitments made through the Net Zero Banking Alliance and New Zealand's domestic emissions-reduction targets set by the Climate Change Response (Zero Carbon) Amendment Act 2019.

02. **Support our customers to transition to low-emissions, climate-resilient business models**, demonstrating our commitment to financing the climate transition and recognising that we will only meet our net zero commitments if our customers are taking their own meaningful climate action.

03. **Understand our climate-related risk across our portfolios and support our customers to adapt and build resilience**, helping better incorporate climate-related risk into our strategy, risk management approach, and financial planning to enable us to publicly disclose climate-related risk.

04. **Continue to actively reduce our emissions across our operations and supply chain**, recognising that to support our customers we must have our own house in order and show leadership in how we tackle operational and supply chain climate impacts.

The key actions under each objective, set out at the end of this document, reflect the existing commitments, metrics BNZ has set to deliver on the transition. The Climate Strategy will continually evolve to reflect climate impact areas identified through increasing data access and analytics.

Our Climate Strategy

Key enablers to the delivery of our Climate Strategy

Integration of climate-related impacts across our governance structure, key frameworks, policies, processes and controls will help identify climate change risks and opportunities, for the long term. To drive the implementation and delivery of our Climate Strategy, we have focused on four key enablers (as shown to the right).

Scenario analysis

Beyond the scenario-based climate assessment (below), BNZ, in conjunction with the New Zealand Bankers' Association and its members, is developing three scenario pathways, including a 1.5°C scenario and a greater than 3°C scenario. These narrative-based scenarios will cover a range of key sectors and their associated value chains. They will be used to test the resilience of our Climate Strategy, and its impact on our financial position and cash flows.

Current impacts of climate change on BNZ

Table 1 (on page 8) highlights the current activities to address climate-related risks and opportunities, mapped to our strategic objectives and the type of climate risk being addressed. Each activity underway focuses on either acute physical risk, such as damage caused by extreme weather events, or chronic physical risk, such as sea-level rise, and/or transition risk such as regulatory, market, policy or technological risks that will emerge due to climate change impacts. We have identified the type of risk the activity is responding to through shading within the table.

Quantifying the financial impacts of these activities will be a part of our forward-looking work programme.

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Our key enablers

01. **Improved access to data:** We are improving and integrating climate data analytics across our operations enabling us to collect, store, layer and manage climate data, including physical risk and emissions data, for decision-making and reporting requirements. Access to accurate data, whether from government bodies, industry groups or direct from customers, is essential.

02. **Banker engagement and KPIs:** We recognise that our colleagues can be our biggest advocates for climate change action. We have increased colleague engagement through the running of climate workshops, providing additional ESG training through our Banker Accreditation pathways, and revising and digitising internal ESG due diligence and guidance. Executive performance scorecards require executives to meet ESG commitments.

03. **Access to capital and integration of risk:** We are looking at how we can support our customers to accelerate to a low-emissions economy. We are identifying climate-related opportunities by working with customers on sustainability-linked lending, providing incentives for customers taking action on climate change, and providing tools, such as the Climate Action Toolbox, to help our customers measure and reduce their emissions. We are integrating climate-related risks through the Climate Risk Management Framework, as detailed in the Risk Management section on page 17.

04. **Strong governance:** We recognise that climate change is a complex systems issue. We have improved our climate-related governance and will continue strengthening it as climate risk management develops (see page 3).

Our 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 portfolios 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 the 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

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Table 1: Current activities underway to address climate change at BNZ

Strategic objectives	Activity	Physical risk	Transition risk
Transition our investment and lending portfolios to net zero emissions by 2050	Set emissions-reduction targets across our lending portfolios in material sectors.	■	■
	Commitment 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.		■
	Develop position statement to detail our approach to our Oil and Gas portfolio.		■
	Calculate our financed emissions, prioritising our Oil and Gas, Power and Dairy portfolios.		■
	Develop a solution to enable the capture of climate/ESG data and integration with our systems.	■	■
	Undertake transition assessments with our most emissions-intensive customers to understand their current commitments and ability to address climate-related risks.		■
	Partner on the Climate Action Toolbox to help SME customers measure and reduce emissions and allow BNZ to identify targeted transition financing opportunities.		■
Support our customers to transition to low-emissions, resilient business models	Deliver agribusiness scalable sustainability linked loan product.		■
	Deliver $10 billion of sustainable finance by 2025 in accordance with our Sustainable Finance Framework.	■	■
	Develop new sustainable finance products to incentivise the transition to the low-emissions economy.	■	■
	Strengthen the purpose and priorities of our Sustainable Finance Framework in relation to climate change, enabling more targeted transition financing.		■
	Integrate ESG, climate risk policy and decision making into BNZ's core risk processes and teams to ensure alignment between how we are supporting customers to transition and managing climate-related risk.		■
Understand climate-related risk across our portfolios and support our customers to adapt and build resilience	Ensure ongoing access to relevant and up to date ESG, including climate, training for all colleagues.		■
	Undertake climate risk assessments, identifying where there is concentrated climate risk within the BNZ portfolios.	■	
Continue to actively reduce our emissions across our operations and supply chain	Set emissions reduction targets across our supply chain by end of 2023.		■
	Reduce our operational emissions by 60% by the end of 2025 from a 2019 baseline.		■
	Toitū carbonzero certified for our operations by the end of FY2022.		■

■ This indicates the relevant risk each activity addresses.

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Climate-related risk and opportunities assessment

Climate change is a pervasive risk that will impact all elements of society in differing ways. Understanding the extent of climate-related risk is a complex challenge, especially for banks who are exposed to the entire economy. Some aspects of future climate risk can be inferred from historical events. For example, general impacts from drought on agriculture are well understood so any projected drought risk may be similar to current assessments (albeit more frequent and/or longer). However, how other climate risk impacts specific sectors is still uncertain and may involve compounding issues with cascading physical and transition risks occurring, potentially in parallel. For example, the dairy sector may face productivity declines as a result of increased heat stress for cattle and, at the same time, farmers may have to navigate increasing carbon prices.

Our initial climate-related assessment has used the Net Zero Banking Alliance criteria to identify seven key portfolios. They are:

- Agriculture – Dairy
- Agriculture – Non-dairy
- Power
- Oil and Gas
- Transport
- Residential Property
- Commercial Real Estate.

These are "the Assessed Portfolios".

The Assessed Portfolios cover 68% of BNZ's total EAD as at 30 September 2021. Portfolios comprising the remaining 32% are not covered in these risk assessments. A full list of ANZSIC codes considered as part of the Assessed Portfolios is included in Appendix A.

We have used our financial data as at 30 September 2021, and all amounts are reported in New Zealand dollars.

Assessing transition risk

Transition risks refer to risks associated with the transition to a low-emissions, climate-resilient economy. These include policy, legal, technological and market changes in response to mitigating and adapting to climate change. Identifying high emissions-intensive industries can be one proxy for identifying which industries are most exposed to transition risk.

In 2021, the Ministry of Business Innovation and Employment (MBIE) analysed and categorised 106 of Aotearoa New Zealand's industries into high, medium high, medium and low carbon intensity. This analysis assumed that the most intensive industries are more likely to be exposed to transition risk, such as sensitivity to carbon price or regulatory change, than low carbon-intensity industries.[1]

This year, we have mapped our Assessed Portfolios against the MBIE categorisation of emissions intensity.

Limitations of our assessment of transition risk:

- No identification of a sector's ability to respond to transition risk. 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 easier than others and should face lower abatement costs;
- No assessment of impacts that different industries may experience over the course of transition. Future policy decisions will be a key factor; and
- No analysis of impact on BNZ across different climate scenarios.

By way of example, we have assessed that within our industry-related loans we have $16.97 billion EAD with "high-emissions intensity" and, therefore, with high exposure to potential transition risk. This represents just under half of BNZ's industry-related loans that were contained within our Assessed Portfolios. This includes, for example, parts of BNZ's agricultural lending, but excludes, for example, residential property lending. By contrast, just over half of BNZ's industry-related loans within the Assessed Portfolios were identified as low transition risk, including all of BNZ's commercial real estate lending within the Assessed Portfolios. Figures 4 and 5 on the next page show what proportion of our lending (measured by EAD) is exposed to high emissions-intensive sectors, and which of our sectors make up the high emissions sectors, as classified by MBIE.

What is EAD?

EAD, or Exposure at Default, is the total value the bank is exposed to when a loan defaults. It is a key measure used by banks to calculate risk.

What risk assessments have we undertaken so far?

1. We have quantified two elements of transition risk across the Assessed Portfolios (emissions intensity and regional impact), using ANZSIC codes as a proxy for portfolios that are sensitive to climate risk because they are highly emissions intensive.
2. We have quantified two types of physical risk – sea-level rise and extreme coastal inundation – within the Assessed Portfolios, and present regional analysis for our Residential Property and Commercial Real Estate portfolios.
3. We have started qualitative assessment of other physical and transition risks across the Assessed Portfolios, which make up 68% of our loan book.

1. MBIE, "The emissions exposure of workers, firms and regions," 2021. [Online]. Available at https://www.mbie.govt.nz/dmsdocument/13781-the-emissions-exposure-of-workers-firms-and-regions. [Accessed 1 August 2022].

Transition risk analysis: exposure within Assessed Portfolios to high emissions-intensity sectors

Figure 2: Percentage of BNZ's total EAD in the Assessed Portfolios

In-scope: the Assessed Portfolios	Out-of-scope: Financial and investment, manufacturing, trade and other portfolios
$74,247m EAD (67.7% of total EAD)	$35,479m EAD (32.3% of total EAD)

Figure 3: Breakdown of loans within the Assessed Portfolios

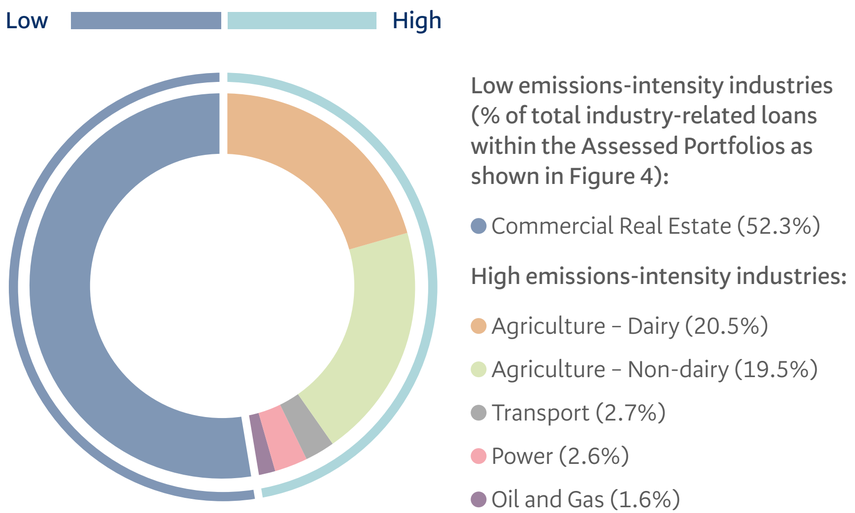
Industry-related loans	Residential loans
$36,122m EAD (48.7% of Assessed Portfolios EAD)	$38,125m EAD (51.3% of Assessed Portfolios EAD)

Industry-related loans relate to the following Assessed Portfolios: Agriculture (Dairy), Agriculture (non-Dairy), Transport, Power, Oil and Gas, and Commercial Real Estate.

Figure 4: Emissions intensity of industry-related loans within BNZ's Assessed Portfolios

Low	High
$18,892m EAD (52.3% of industry-related loans EAD)	$16,971m EAD (47.0% of industry-related loans EAD)

Figure 5: BNZ's exposure to industry-related loans within the Assessed Portfolios



Represents the portfolio's EAD as a percentage of the total EAD of BNZ's industry-related loans within BNZ's Assessed Portfolios (as shown in Figure 4). Calculated using all BNZ's in-scope industry loans as of September 2021. The residential portfolio was excluded because MBIE did not review residential property in its analysis (which focused on industries with an ANZSIC code only). For clarity, certain Agricultural lending (Non-dairy) is not included in Figures 2 to 5 (e.g. Forestry); see Appendix for a full list of industries.

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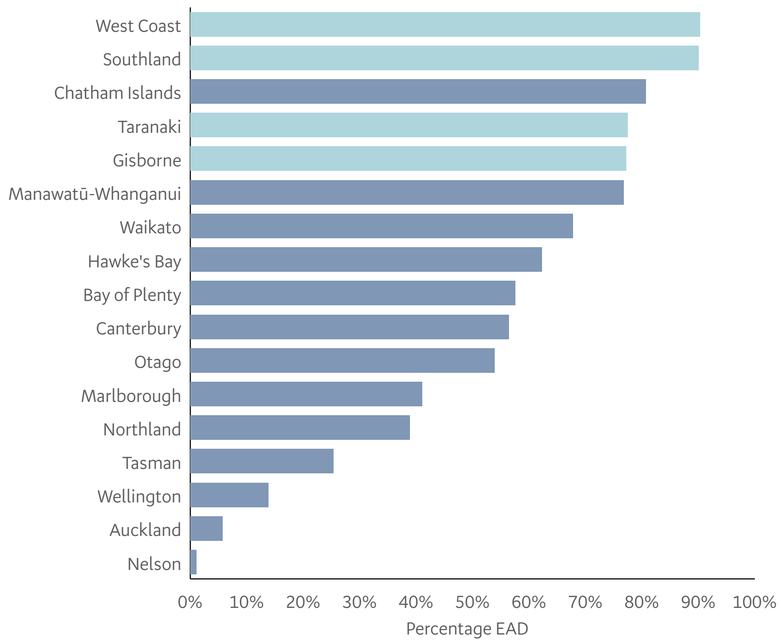
The MBIE analysis identified which regions in Aotearoa New Zealand are more sensitive to transition risk than others due to their concentration of regional employment in emissions-intensive industries (MBIE 2021).

Figure 6 shows the percentage of EAD exposure to high emissions industries in each region. In the MBIE report, four regions that had intensive industries which are regionally significant for employment are identified (Gisborne, Taranaki, West Coast and Southland). The regional concentration of emissions-intensive employment reinforces the need for us to work closely with customers and their communities in the transition to a low-emissions economy and monitor potential cascading impacts on portfolios.

Figure 6: BNZ's exposure to high emissions-intensive industries in each region (% of Assessed Portfolios EAD)



Represents the EAD of high emissions-intensive industry loans as a percentage of the geocoded industry loans from BNZ's Assessed Portfolios in that region. The intensive industries regionally significant for employment, as identified by MBIE, are coloured in teal. Calculated using geocoded properties from BNZ's Assessed Portfolios as at September 2021.

Our exposure to residential and commercial real estate lending in these regions is presented in Table 2. An awareness of regions exposed to more emissions-intensive industries can help BNZ identify potential areas that may present climate-related macro economic risks (for example, reduced consumer viability for residential lending). They can also be used to help identify areas exposed disproportionally to combined transition and physical climate-related risks and identify where extra support may be needed.

Table 2: BNZ's exposure ($m) to residential lending in regions with high emissions-intensive industries that are regionally significant for employment

Region	Emissions-intensive industries regionally significant for employment	EAD of Residential loans (NZD, m)	EAD of Commercial Real Estate loans (NZD, m)	EAD of Residential and Commercial Real Estate loans as % of total EAD
Gisborne	Sheep & Beef Farming	$238	$90	0.3%
Taranaki	Dairy Farming, Coal, Electricity & Gas Supply, Coal, Oil & Gas	$574	$194	0.7%
West Coast	Dairy Farming, Coal, Oil & Gas	$152	$33	0.2%
Southland	Dairy, Sheep & Beef Farming, Meat Manufacturing, Other Crop Growing	$503	$107	0.6%

Calculated using geocoded properties from BNZ's key portfolios as at September 2021.

Our current approach to managing exposure to emissions-intensive industries is to develop and publish portfolio-specific emissions-reduction targets for 2030 and 2050. We are prioritising our emissions-intensive industries for target setting.

Assessing physical risk

Physical risks can be acute, such as severe flooding, or chronic, like sea-level rise. We recognise that many New Zealanders are exposed to climate-related physical risks. The risk is especially pronounced in the agricultural and property sectors. We assessed site-specific climate change modelling to better understand the potential exposure of our portfolio to physical risks. This initial risk assessment applies two climate scenarios based on Shared Socioeconomic Pathway (SSP) scenarios used by the Intergovernmental Panel on Climate Change (IPCC) to explore potential global climate futures (see Table 3). As well as climate change modelling, we also reviewed both academic and non-academic research and literature on climate-related physical risks for the Assessed Portfolios.

Pluvial and fluvial flood risk is likely to represent a large climate-related physical hazard to the residential portfolio, with estimates of 400,000 New Zealand properties exposed to this hazard. Flood risk will be a focus for future analysis and reporting.[1]

There are limitations associated with climate models. Climate models are projections, not predictions, of a future state. Numerous downscaling techniques have been applied to make these scenarios relevant for New Zealand, each with their own limitations.

Table 3: Climate scenarios used in physical risk modelling

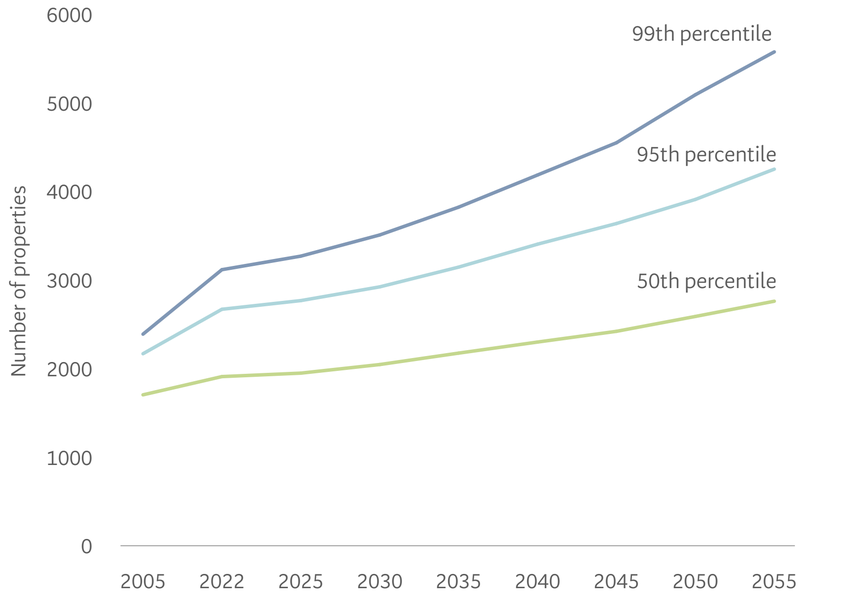
Scenario name in this report	Summary statement	Detailed summary	Percentile of outputs
1.5°C	A world where warming is contained to 1.5°C	Based on SSP1–1.9. It is a scenario intended to limit warming to below 1.5°C by 2100 above pre-industrial levels. Global CO_2e emissions are cut to net zero by 2050. The economy follows more sustainable practices. Although extreme weather is more common, the worst impacts of climate change do not materialise.	99th
High-end scenario	A high-emissions scenario – global warming is above 4.0°C	Based on SSP5–8.5. On the high end, this scenario is driven by a doubling of CO_2e emissions by 2050. Economic growth is rapid and fuelled by energy-intensive lifestyles. By the end of the century, the average global temperature is well above 4°C.	99th

1. Paulik, R., Stephens, S., Wadhwa, S., Bell R., Popovich, B. & Robinson, B. 2019, Coastal Flooding Exposure Under Future Sea-level Rise for New Zealand, prepared for The Deep South Challenge, Available at <https://deepsouthchallenge.co.nz/wp-content/uploads/2021/01/Exposure-to-Coastal-Flooding-Final-Report.pdf> (1 August 2022).

Why are we using the 99th percentile of climate model outputs?

Including the outlier risk of the 99th percentile highlights the fullest extent of BNZ's potential risk exposure. We used an envelope approach and modelled the 50th, 95th and 99th percentiles of the climate model results to explore as many possible risk futures as projected by the entire pool of climate models. The model range showed a breadth of results and will help us to determine risk appetite into the future (see Figure 7, below). For this assessment, all figures are based on the 99th percentile of climate model outputs. An outlier risk beyond the range of the model is still possible (i.e. a 1-in-100 event).

Figure 7: Number of properties within the Assessed Portfolios exposed to extreme coastal inundation under the high-end scenario, showing the highest number of properties at possible risk from physical climate changes



The number of properties are those that are geocoded in BNZ's system and allocated to BNZ's Assessed Portfolios; 99% of all properties in BNZ's Assessed Portfolios are geocoded.

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A focus on increasing sea levels and coastal inundation

In 2022 our physical risk analysis considered property-specific modelling for sea-level rise and extreme coastal inundation under two climate scenarios, measured at 2030 (to align with current government policies) and 2055 (to cover a full 30 year mortgage issued in 2025). The results of the modelling show that BNZ may have properties exposed to sea-level rise and extreme coastal inundation over the coming decades.

Permanent sea-level rise inundation means a property is likely to be impacted by a climate-change-induced increase in the 2005 baseline tidal levels (taking into account projected vertical land movement). The impacts of sea-level rise include permanent flooding (inundation) of low-lying areas which are expected to exacerbate the frequency, extent and depth of tidal inundation. The impacts across the Assessed Portfolios from initial sea-level rise modelling are shown in Table 4.

Extreme coastal inundation means that there is a 1% chance of coastal inundation in any one year, as a result of a combination of mean sea-level rise, wind change pressure, as well as taking into account projected vertical land movement. Extreme coastal inundation presents a greater risk for properties in the Assessed Portfolios than permanent sea-level rise inundation alone, as shown by Table 4 below and Figure 8, right.

The potential cascading impact of coastal hazards include insurance premium increase or insurance withdrawal, rate and lifeline utility charge increases associated with coastal defences, and decreased property value. We expect to incorporate this into future assessments.

Limitations of this initial assessment include the following:

- The potential sea-level rise and extreme coastal inundation are based on the central point of each property. This may not reflect the location of actual buildings on the property. The assumption is that if the centre of the site is exposed, then the building will be exposed.

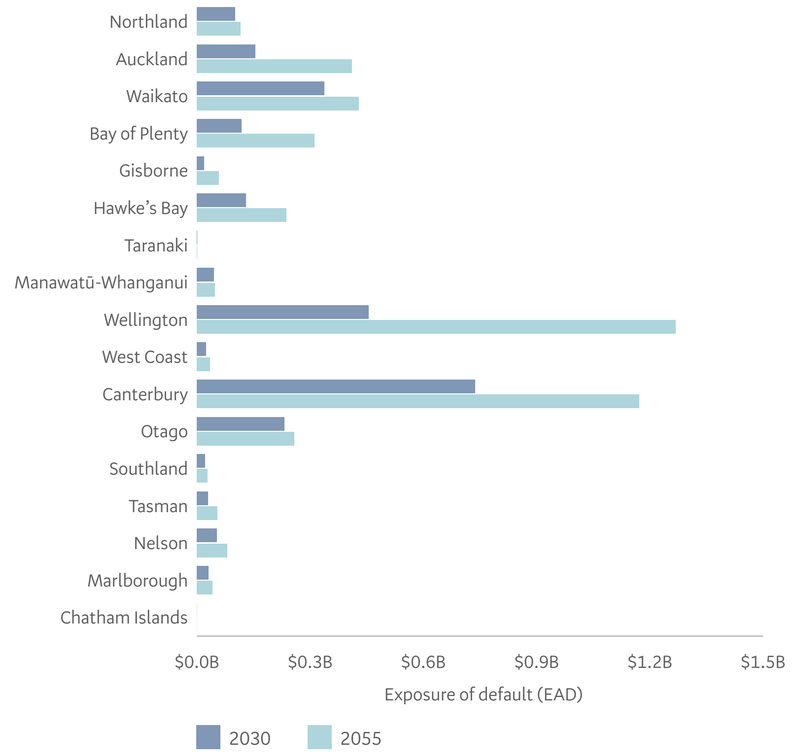
This assessment does not consider:

- individual building characteristics or potential building damage;
- existing or potential adaptation options available to each site;
- 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; and
- compounding and confluence events, such as a storm surge coinciding with a fluvial or pluvial flooding event.

Table 4: BNZ's exposure across its Assessed Portfolios to sea-level rise and extreme coastal inundation under possible scenarios

Physical risk	Scenario	2030	2055
Sea-level rise inundation	1.5°C	$69m (54 properties) (0.1% of total EAD)	$178m (125 properties) (0.2% of total EAD)
	High-end	$69m (54 properties) (0.1% of total EAD)	$247m (206 properties) (0.2% of total EAD)
Extreme coastal inundation	1.5°C	$2,486m (3,504 properties) (2.3% of total EAD)	$3,793m (4,871 properties) (3.5% of total EAD)
	High-end	$2,479m (3,454 properties) (2.3% of total EAD)	$4,517m (5,521 properties) (4.1% of total EAD)

Figure 8: BNZ's exposure across the Assessed Portfolios to extreme coastal inundation by region in 2030 and 2055 ($b EAD)



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Portfolio-specific climate-related risk insights across the Assessed Portfolios

We have set out below qualitative insights across the Assessed Portfolios (which cover 68% of total EAD). While the Assessed Portfolios do not cover total EAD, we have provided the percentage of each specific portfolio within the Assessed Portfolios against total EAD. As above, our focus for the physical risk assessment has been the impacts of sea-level rise and coastal inundation on BNZ's residential and commercial real estate portfolios. Key portfolios yet to be assessed include manufacturing, wholesale and retail trade and financial, and investment. We will continue to broaden and deepen our climate analysis.

Agriculture: Dairy

EAD (NZD): $7,416m	Percentage of total EAD: 6.8%

Physical risk: Heat stress is a current challenge for New Zealand livestock. Without adaptation, livestock farms exposed to heat stress may experience additional financial impacts. The Dairy sector is also sensitive to drought, and drought occurrences may intensify, increasing impacts on those farms without new and/or ongoing access to irrigation or water consents.

Transition risk: The Dairy sector is significantly exposed to transition risk. This sector is one of New Zealand's largest producers of GHG emissions, representing approximately 22% of the country's gross emissions and 42% of agricultural emissions.[1] Transition risks for the Dairy sector include exposure to emissions pricing, changing market/consumer preferences and potential trade restrictions in key export markets.

Opportunities: Providing finance for implementing low-emissions technologies and adaptation actions, for example cooling sheds.

Agriculture: excluding Dairy

EAD (NZD): $7,034m	Percentage of total EAD: 6.4% (Forestry, logging and other primary sector industries excluded. Refer to Appendix A for a list of included sectors.)

Physical risk: Climate change may reduce the quality and quantity of output across many areas in the agricultural sector. The physical effects of climate change may impact the length of the growing season and the quality (size, shape, taste) of horticulture products, the distribution of invasive species and diseases, and the efficacy of some pest control agents.[2]

Coastal farms may see a reduction in viable land as saline inundation affects groundwater and storm surges can result in a reduction in short-term agricultural viability due to salination of soils.[2] This has already occurred in some coastal parts of New Zealand.[3]

The impacts are likely to increase over time as temperatures increase both globally and in New Zealand, with impacts, such as pressure on water availability, already being felt.[1] Some industries are more exposed than others; for example, according to a NIWA study, warmer winters may cause Hayward (green) kiwifruit in the Te Puke area to become consistently marginal by the 2030s and unlikely to be viable by the end of the century.[4]

Transition risk: The agriculture sector, excluding dairy, contributes 30% of New Zealand's gross emissions.[1] The key transition risk for the agricultural sector comes from possible exposure to emissions pricing. Additional transition risks can emerge, for example, from tightening of environmental consents relating to water access.

Opportunities: There are numerous opportunities for the agricultural sector to respond to a changing climate while balancing underlying climate risks such as water security. For example, a warmer climate increases the viability of avocado crops in NZ. Opportunities also emerge if New Zealand successfully implements the net zero emissions transition providing the option to market low or zero emissions products internationally. Funding incentives can be provided in return for improved environmental performance, for example BNZ's agribusiness sustainability-linked loan offering.

Power

EAD (NZD): $941m	Percentage of total EAD: 0.9% (including power generation, transmission and distribution. Refer to Appendix A for a list of included sectors.)

Physical risk: The National Climate Change Risk Assessment (NCCRA) showed that New Zealand's Power sector is exposed to a number of physical risks, including insurability of assets, damage to assets from extreme weather events and coastal hazards, and increased water stress from competing demands and/or changing rainfall or snow melt. This could result in reduced hydro performance, losses in

1. StatsNZ (2021) Greenhouse gas emissions (industry and household): Year ended 2020. Available at https://www.stats.govt.nz/information-releases/greenhouse-gas-emissions-industry-and-household-year-ended-2020/
2. MfE, "Aotearoa New Zealand's first national adaptation plan," Ministry for the Environment, Wellington, 2022.
3. MfE, "Te hau mārohi ki anamata - Towards a productive, sustainable and inclusive economy: Aotearoa New Zealand's first emissions reduction plan," Ministry for the Environment, 2022.
4. Tait, A., Paul, V., Sood, A., & Mowat, A. (2018). Potential impact of climate change on Hayward kiwifruit production viability in New Zealand. *New Zealand Journal of Crop and Horticultural Science*, 46(3), 175-197. Retrieved 1 August 2022.

generation and transmission efficiency due to extreme temperatures, and changes in timing and nature of peak loads (for example, increased incidents of peak loading in summer as a result of increased cooling requirements).

Transition risk: There are numerous transition risks in the Power sector. These are particularly linked to technology risk; for example, the speed of electric vehicle uptake and the extent to which they influence the supply or demand on the electricity network. Although approximately 80% of New Zealand's generation is from low-emissions renewable energy[1], the remaining percentage is exposed to carbon pricing, access to insurance and finance[2], and managing the increased demand without the investment in supply. This is especially relevant given New Zealand's reliance on the Power sector to pick up the increased demand created by decarbonising the wider Energy sector, responsible for 41% of New Zealand's gross emissions.[3]

Opportunities: New Zealand's energy system is likely to shift to electrification with opportunities associated with the financing of the key enablers. These include renewable energy generation (wind, solar, pumped hydro), energy storage as well as distribution technologies and infrastructure.

Oil and Gas

EAD (NZD): $674m	Percentage of total EAD: 0.6% (Customers allocated by BNZ as Petrochemicals or fuel retailers (by ANZSIC) have been excluded from this analysis. Refer to Appendix A for list of included industries.)

Physical risk: As well as transition risk, the Oil and Gas sector is exposed to climate-related physical risks. Large-scale disasters in this sector can have considerable environmental and human health consequences. For example, Hurricane Ida in the US caused nearly 350 oil spills. With the projected increase in incidents and/or intensities of extreme weather events, the risk of these types of events occurring increases.

Transition risk: There are significant transition risks associated with the Oil and Gas sector. New Zealand's recent Emissions Reduction Plan shows phasing out fossil gas presents short-term and long-term challenges, "including balancing capital investment with declining fossil gas use, fossil gas affordability and the risk of stranded network assets."[4]

Several insurers have indicated that they will limit or withdraw support for the industry, with the Lloyd's insurance market recently stating that they will no longer insure fossil fuels.[5] The transition risk for the sector is predominantly based on its ability to transition to alternative fuels as early as possible.

Transport

EAD (NZD): $1,165m	Percentage of total EAD: 1.1%

Physical risk: Although physical risks can damage key assets (for example, vehicles and depots), many of the more challenging issues for this sector are likely to arise from disruption to the network due to climate change. Disruptions can range from the very local (for example, a washed-out road to a major tourist site), regional (for example, impact on major freight hubs), through to disruption of global distribution networks.[4] Recent NIWA research identified that over 2,700km of New Zealand's roads are exposed to risk from storm surge with 90cm of sea-level rise.[6] Extreme wind can cause significant risk to freight trucks and many companies have wind speed thresholds that result in yards and depots being closed. As these extreme events increase so will the disruptions or damage.

Transition risk: Currently liquid fuels are captured in the Emissions Trading Scheme (ETS) and any rapid increase in the price on carbon could result in unplanned increased operational costs associated with fossil fuels. In 2022, increased fuel prices have placed a considerable strain on some industries in the transport sector.[7] In July 2022, the Climate Change Commission (CCC) recommended a technical adjustment to ETS allocations to reduce the fossil fuel allowance which would increase the price of petrol at the pump. Additional transition risks for transport include technology uncertainty (for example electric versus hydrogen fuel uptake), and the speed of deployment of infrastructure to support the low-emissions transition (for example charging stations and/or hydrogen production). The decarbonisation of the Transport sector is connected with the Power sector.

Opportunities: The opportunities for BNZ arise in providing financing solutions for electric vehicles (EVs) and other low-emissions vehicles, and their associated infrastructure (for example, charging stations or green hydrogen production).

1. MBIE (2021) Energy in New Zealand 2021. Available at: https://www.mbie.govt.nz/dmsdocument/16820-energy-in-new-zealand-2021
2. ARF 2020, Suncorp to stop insuring oil and gas. Available at: https://www.afr.com/companies/financial-services/suncorp-to-stop-insuring-oil-and-gas-20200821-p55nwu
3. ECCA (2020) New Zealand's emissions and energy profile by sector. Available at: https://www.eeca.govt.nz/assets/EECA-Resources/Corporate-documents/New-Zealands-emissions-and-energy-profile-by-sector.pdf
4. MfE, "Te hau mārohi ki anamata – Towards a productive, sustainable and inclusive economy: Aotearoa New Zealand's first emissions reduction plan," Ministry for the Environment, 2022.
5. Kollewe, J. 2020. "Lloyd's market to quit fossil fuel insurance by 2030." The Guardian. Accessed 1 August 2022. Available at: https://www.theguardian.com/business/2020/dec/17/lloyds-market-to-quitfossil-fuel-insurance-by-2030.
6. Paulik, Ryan; Stephens, Scott; Wadhwa, Sanjay; Bell, Rob; Popovich, Ben; Robinson, Ben (2019) Coastal Flooding Exposure Under Future Sea-level Rise for New Zealand, prepared for The Deep South Challenge. Available at: https://deepsouthchallenge.co.nz/wp-content/uploads/2021/01/Exposure-to-Coastal-Flooding-Final-Report.pdf
7. Cann, G. 2022. Trucking operators 'could fail' as fuel jumps 72% and customers refuse to pay more. Stuff. Accessed 1 August 2022. https://www.stuff.co.nz/business/129231223/trucking-operators-could-fail-as-fuel-jumps-72-and-customers-refuse-to-pay-more

Residential Property

EAD (NZD): $38,125m | Percentage of total EAD: 34.7%

Physical risk: The residential mortgage portfolio represents the largest of BNZ's physical exposures (number of properties) to sea-level rise and extreme coastal inundation as shown Table 5 (below).

Transition risk: In 2020, residential households represented approximately 10% of New Zealand's emissions (7,922kt CO_2-e), with 88% of that associated with transport and 9% for heating and cooling[1]. At the household level, the transition risks include increased transport fuel and electricity costs as a result of carbon pricing. For the physical buildings themselves, the transition risk is associated with government regulations and controls. For example, changes to land-use planning rules because of climate impacts may reduce land use rights and/or lead to increased rates or service charges. Changes to building regulations for insulation, energy efficiency and/or resilience measures may result in increased upfront costs for new builds.

Opportunities: The Opportunities include providing finance to retrofit homes to be more energy efficient, resilient to extreme events and designed to reduce clean-up costs if an extreme weather event does occur.

Table 5: EAD and number of residential properties exposed to sea-level rise and extreme coastal inundation under two climate scenarios (for 2030 and 2055)

Physical risk	Scenario	2030	2055
Sea-level rise inundation	1.5°C	$10m (0.01% of total EAD) 28 properties	$25m (0.02% of total EAD) 70 properties
	High-end	$10m (0.01% of total EAD) 28 properties	$47m (0.04% of total EAD) 132 properties
Extreme coastal inundation	1.5°C	$883m (0.8% of total EAD) 2,756 properties	$1,238m (1.1% of total EAD) 3,790 properties
	High-end	$875m (0.8% of total EAD) 2,710 properties	$1,415m (1.3% of total EAD) 4,253 properties

Note: residential properties that were not linked to a Home Loan product type (such as Cards or Term Deposits) were excluded from this analysis.

Commercial Real Estate

EAD (NZD): $18,892m | Percentage of total EAD: 17.2%

Physical risk: As with residential property, commercial properties can be affected by climate change. These impacts may ultimately reduce the underlying property value of the bank's collateral. The number and EAD of properties impacted by sea-level rise and extreme coastal inundation are shown by Table 6 (below). The analysis reflects physical risk exposure for specific properties at 2030 and 2055 but does not take into account borrower ability to mitigate or adapt.

Transition risk: Non-residential and commercial buildings make up a smaller proportion of New Zealand's building stock but are typically larger, more complex and have higher user intensity than residential buildings. In New Zealand, the majority of commercial and industrial buildings remain inefficient and businesses continue to both use and pay for more energy than they need.[2] MBIE is currently implementing the Building for Climate Change programme, with the intention that "the Building Code will move towards introducing carbon-emissions caps and more holistic building performance measures."[3] To achieve this MBIE will be looking at:

- operational carbon emissions from the energy and other resources used when operating buildings; and
- embodied carbon emissions that are emitted during the manufacture and use of the materials and products that form the building across its life, from construction to deconstruction.[3]

This may have increased upfront compliance cost implications for those in the commercial real estate sector.

The proposed introduction of mandatory disclosure of embodied carbon for new buildings (2024–2029) may assist with BNZ's quantification of financed emissions in this sector.

Opportunities: Financing will be required to improve inefficient building stock, adapt properties for climate change, and to support new, climate-resilient development.

1. StatsNZ (2022) Greenhouse gas emissions (industry and household): Year ended 2020, available at https://www.stats.govt.nz/information-releases/greenhouse-gas-emissions-industry-and-household-year-ended-2020/
2. MfE, "Te hau mārohi ki anamata – Towards a productive, sustainable and inclusive economy: Aotearoa New Zealand's first emissions reduction plan," Ministry for the Environment, 2022.
3. MBIE 2021, Outcome of consultation - Building Code update 2021. Available at: https://www.building.govt.nz/assets/Uploads/building-code-compliance/building-code-updates/outcome-consultation-building-code-update-2021.pdf

Note: Commercial Real Estate properties assessed are only those with an ANZSIC code of 7711 (Residential Property Operators) or 7712 (Commercial Property Operators and Developers). The properties with a Card product type were excluded from this analysis.

Table 6: EAD and number of commercial properties exposed to sea-level rise and extreme coastal inundation under two climate scenarios (for 2030 and 2055)

Physical risk	Scenario	2030	2055
Sea-level rise inundation	1.5°C	$37m (0.03% of total EAD) 24 properties	$46m (0.04% of total EAD) 43 properties
	High-end	$37m (0.03% of total EAD) 24 properties	$58m (0.05% of total EAD) 55 properties
Extreme coastal inundation	1.5°C	$1,167m (1.1% of total EAD) 755 properties	$1,889m (1.7% of total EAD) 1,136 properties
	High-end	$1,164m (1.1% of total EAD) 749 properties	$2,312m (2.1% of total EAD) 1,343 properties

Risk Management

For the purpose of our assessment and reporting, climate-related risk is defined as the potential risks that may arise from the impacts of climate change including the efforts to mitigate climate change, inability to adapt to climate change, and the economic and financial consequences such as negative impacts on the risk and return profile, value or reputation of BNZ, our customers or our suppliers. Climate-related risk includes physical and transition risk.

BNZ considers climate risks over the following time horizons (with specific points in time – 2030 and 2055 – being used for the physical risk assessments to date):

- short term: 5 years;
- medium term: 10 years; and
- long term: 30 years.

No elements of the value chain are specifically excluded from BNZ's climate risk management processes. However, as data is not available for all supplier and customer sectors it is not possible to apply these risk management processes to some suppliers and customer sectors at this stage. BNZ intends to extend elements of the value chain within our climate risk management processes as sufficient data becomes available.

The Climate Risk Management Framework shows how climate-related risk is integrated into our overall Risk Management Framework and will assist the Board to discharge its overall responsibility for managing sustainability risk, including climate-related risk. The Climate Risk Management Framework is a key foundational artefact for the integration of climate-related risk across BNZ.

We conducted our first Climate Risk Assessment in 2021 and intend to conduct Climate Risk Assessments annually using climate data that we consider to be most relevant and accurate.

Figure 9: Integration of climate risk within our overall Risk Management Framework

The Board approves the overarching Risk Management Strategy.

The Risk Management Framework is a key component of the Board-approved Risk Management Strategy.

The Board also sets and reviews BNZ's Risk Appetite Statement, including specific Risk Appetite Settings, which is, a key component of the Risk Management Framework, on a regular basis.

The Risk Appetite Settings set risk tolerances for BNZ. This includes capturing significant climate-related financial risks.

The Risk Appetite Settings are implemented through Risk Appetite Metrics and Matrices to ensure these are appropriately rolled out to the frontline.

The BNZ Climate Risk Management Framework sets out how BNZ will manage climate risk effectively and sustainably by setting out BNZ's approach to identify, evaluate, and manage climate risk.

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Risk identification

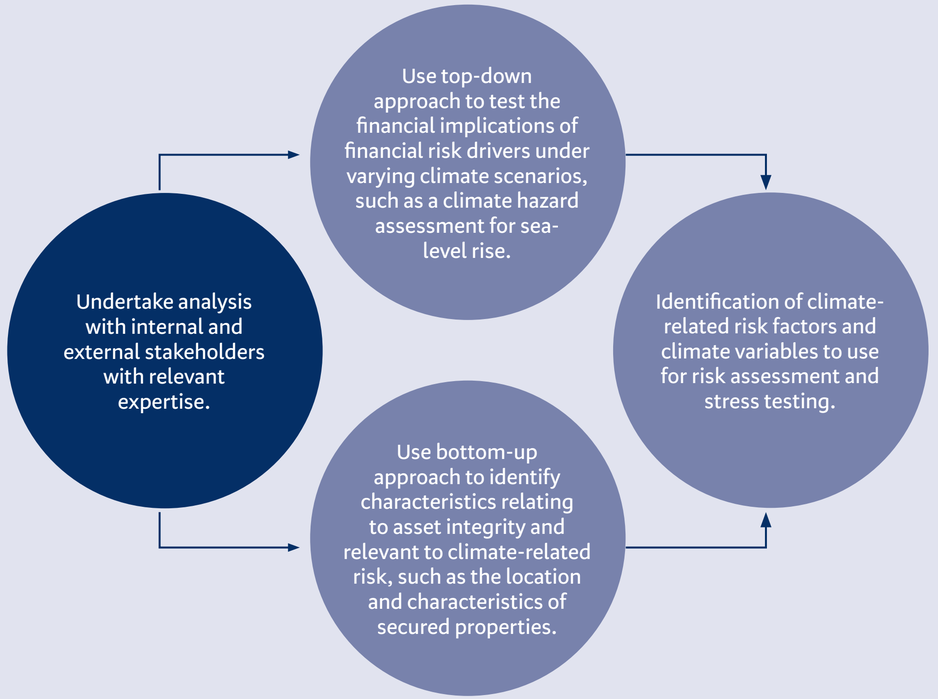
We use risk identification to understand internally generated and externally imposed risks. We also monitor and assess current risks to manage effectively within our risk appetite. Full integration of climate-related risk identification into this approach continues.

Climate-related risks can be different to other material risk categories due to the extended and multi-year timeframes, interdependencies and levels of uncertainty associated with the potential impacts on BNZ and its customers. The characteristics that make them unique are incorporated into our risk identification by enhancing existing processes. The process diagram to the right provides an example of how BNZ will identify climate-related risk.

Below are some general climate-related risk factors identified that we are incorporating into our risk assessment:

- vulnerability to extreme weather events (including supply chain disruption and disruption to business activities);
- level of GHG emissions;
- potential exposure to changes in climate-related policy or technology; and
- linkages to unsustainable practices.

Figure 10: Example of how we identify climate-related risk



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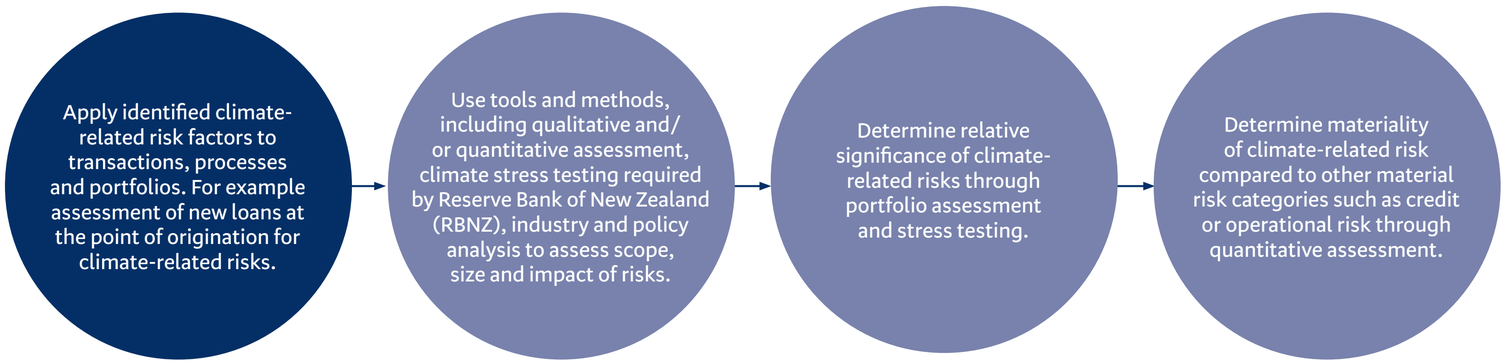
Risk assessment

To assess risks, BNZ's wider Risk Management Framework involves stress testing and scenario analyses to understand vulnerabilities and inform risk assessments and decision-making. These include regular single risk sensitivity testing, periodic enterprise-wide macroeconomic stress testing and scenario analysis. Figure 11 shows how we will assess climate-related risks:

Figure 11: How we assess climate-related risk



Risk management

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

Figure 12: How we manage climate-related risk

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Metrics and Targets

All our emissions, except financed emissions, are verified by Toitū Envirocare, and, while we have been carbon neutral since 2010, we are proud to have achieved a Toitū net carbonzero certification this year. Our financed emissions methodology and data have been pre-assured by Ernst & Young.

We are continuously improving the scope and measurement of our emissions. Since 2020 we have captured more of our scope 3 operational emissions by capturing the carbon emissions of key suppliers that provide transport and logistics services to BNZ. We have recalculated previous years' emissions measurements to accurately reflect our past operational emissions.

Over the past year, we have taken some key steps towards our goal of reducing our operational emissions by 60% by 2025 (from a 2019 baseline). We are:

- transitioning to a 100% EV and hybrid fleet, with the transition is expected to be completed by the end of FY2023;
- embedding some of the reduction in travel that occurred over the past two years of the COVID-19 pandemic;
- working to source all our electricity from renewable sources following our partnership with Ecotricity. Ecotricity is the only electricity retailer that is 100% Toitū carbonzero certified, having measured the cradle-to-grave lifecycle GHG emissions of its sourced electricity product in accordance with PAS 2050:2011.

Operational emissions

Table 7: BNZ's measured operational emissions

	2020	2021	2022
Scope 1 – Emissions (t CO_2e)	3,034	2,519	1,487
Scope 2 – Emissions (t CO_2e)	1,452	1,397	1,209
Scope 3 – Emissions (t CO_2e), excluding financed emissions	5,458	3,026	2,950
Total (t CO_2e)	9,945	6,942	5,647

Our operational emissions are audited for each year ending 30 June. We are working to continually reduce our operational emissions. The remaining emissions we have not reduced are offset, with the offsets verified by Toitū. This year we offset 5,647tCO_2e.

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Financed emissions

We have taken initial steps towards calculating our financed emissions using two portfolios for the year ending 30 September 2021: Power and Oil and Gas (right). While these two portfolios only represent around 1% of our loan book, their emissions intensity is high and there is relatively clear emissions data. For this report we have primarily sourced data directly from customers and/or their reporting where available. We are continuing to improve our methodology and broaden our scope over time to cover all BNZ's financed emissions. This will be an ongoing process as we manage data gaps, data quality and reliability. We will report any adjustments that refine these emissions disclosures and our progress against targets.

Table 8: Financed emissions for Power, and Oil and Gas portfolios

Scope	Outstanding Amount		Total Committed Exposure		PCAF data quality score
	Power	Oil and Gas	Power	Oil and Gas	
Scope 1 and 2 (t CO_2e)	28,401	270,912	95,180	327,995	2
Scope 3 (t CO_2e)	Not available	675,729	Not available	1,646,734	2
Total (t CO_2e)	28,401	946,642	95,180	1,974,730	
Percentage of portfolio represented	50%	91%	60%	88%	
Percentage of loan book represented	0.2%	0.4%	0.6%	0.5%	

BNZ's financed emissions for Power include limited financing of coal-fired generation assets in New Zealand.

Customers allocated by BNZ as Petrochemicals or fuel retailers (by ANZSIC) have been excluded from our oil and gas financed emission quantification in this Climate Report. (See Appendix A for a full list of industries included in this assessment.)

Table 9: PCAF methodology for calculating financed emissions

Private Companies

$$\sum_{c} \frac{\text{Outstanding amount or } TCE_c}{\text{Total equity + debt}_c} \times \text{Company Emissions}_c$$

Listed Companies

$$\sum_{c} \frac{\text{Outstanding amount or } TCE_c}{\text{Enterprise value including cash}_c} \times \text{Company Emissions}_c$$

(with c = borrower or investee company)

What is PCAF and what does a data quality score mean?

PCAF (Partnership for Carbon Accounting Financials) is a global partnership of financial institutions who have come together to develop and implement a harmonised approach to assessment and disclosure of GHG emissions associated with loans and investments.

We follow the PCAF guidance for estimating the emissions data quality we used for calculating financed emissions. A score of one is best and reflects verified and disclosed emissions. A score of five is worst and reflects poor emissions data quality. The score of two for our Power and Oil and Gas portfolios reflects that the emissions data we have used is almost exclusively provided by our customers and some is verified. This data quality score only applies to the part of the portfolio on which we have calculated financed emissions, as disclosed in Table 8, left.

While we recognise that TCE is an extension of the PCAF methodology we have included it with outstanding amount in the PCAF formula for ease of comparison.

What does Outstanding Amount mean?

Outstanding amount refers to the amount of a loan that is still to be repaid, or is outstanding, to the bank.

Using outstanding amount to calculate financed emissions gives an accurate historical reflection of the portion of customer activity and, therefore, emissions the bank has funded. However, it is also a volatile measure, making it difficult to base emissions reductions targets on.

What does Total Committed Exposure mean?

Total Committed Exposure (TCE) refers to the total amount of funding a client 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.

Using TCE to calculate financed emissions provides a more stable metric by which to measure and set emissions reductions targets as it better represents our commitment to the customer and is less likely to fluctuate.

We will disclose our financed emissions based on both the outstanding amount and TCE to provide a transparent measure of our financed emissions.

Financed emissions continued

Scope

Our FY2022 financed emissions calculations include the majority of the corporate loan portfolio for clients in the Power and Oil & Gas sectors. Capital markets activity and structure products, such as derivatives, hedging or trading, are excluded from this analysis. We provided minimal project finance to the Power sector so have excluded it from this analysis.

We have used the Australian and New Zealand Standard Industrial Classification (ANZSIC) system to categorise our Power and Oil & Gas portfolios. For specific ANZSIC codes included in each portfolio, please refer to Appendix A.

Methodology

With the exception of some of our wind and solar customers, all Power and Oil and Gas sector scope 1, 2 and 3 emissions have been sourced directly from customer reports. For our customers operating wind and solar, we have estimated zero emissions in accordance with McLean et al.[1]

Our approach to calculating financed emissions for each commercial loan is aligned with the PCAF calculation approach for Business Loans.

Limitations and assumptions

This report is an initial step towards understanding the climate-related risks and opportunities for BNZ. We have disclosed a limited set of quantitative and qualitative risks and opportunities across 68% of our loan book. We intend to expand this coverage in FY2023.

The financial reporting year has been aligned to our financial year of 1 October 2020 to 30 September 2021. Financial and emissions values related to client loan exposure and company reporting have been aligned as close to this year-end date as possible, or we have taken information as at the company's closest reporting date. This is aligned to the PCAF principle of best available data and is a known issue for this calculation and reporting.

Sector targets

In 2023, in line with our commitments under the Net Zero Banking Alliance and in support of New Zealand's requirements under the Climate Change Response (Zero Carbon) Amendment Act 2019, we will be developing science-based emissions reduction targets for those portfolios with material emissions. These targets will include a 2030 target and a 2050 target and will be aligned to the Paris Agreement goal of limiting warming to 1.5°C.

1. See McLean, K., Richardson, I., Quinao, J., Clark, T., & Owens, L. (November 2020). Greenhouse Gas Emissions From New Zealand Geothermal: Power Generation and Industrial Direct Use. In Proceedings 42nd New Zealand Geothermal Workshop (Vol. 24, p. 26).

How we are tracking

Below is a list of climate work programme metrics and targets we track.

Strategic objectives	Activity	Tracking
Transition our investment and lending portfolios to net zero emissions by 2050	Exit all lending to thermal coal mining by the end of 2025 and all remaining lending to coal mining by the end of 2030.	On track
	Develop an Oil and Gas sector position statement in FY2022. • We intend to publish our Oil and Gas position statement by April 2023.	Not met
	Develop position statements for the Dairy, Power, Transport and Commercial Real Estate sectors by the end of FY2023.	On track
	Calculate BNZ's financed emissions for the Oil and Gas, Power and Dairy sectors and include in the 2022 Climate Report. • Due to limited data availability we were unable to report financed emissions for the Dairy sector.	Not met
	Report on our total financed emissions in the 2024 Climate Report.	On track
	Develop a solution to enable the capture of climate/ESG data and integration with BNZ systems – data will be key to enabling us to identify and manage current and future climate change impacts.	More to do
	Undertake transition assessments with our 50 most emission intensive customers to understand their current commitments and ability to address climate-related risks by the end of 2022.	Complete
	Set emissions-reduction targets for all material Net Zero Banking Alliance sectors and BNZ material sectors by end of 2024.	More to do
	Support 50% of our BNZ SME customers to measure and report on their carbon emissions by 2025.	More to do
Support our customers to transition to low-emissions, resilient business models	Deliver $10 billion of sustainable finance by 2025 in accordance with our Sustainable Finance Framework.	On track
	Revise and strengthen the purpose and priorities of the Sustainable Finance Framework, enabling more targeted transition financing.	On track
	Integrate ESG, climate risk policy and decision-making into BNZ's core risk processes and teams to ensure alignment between how we are supporting customers to transition and managing risk by the end of 2023.	On track

Strategic objectives	Activity	Tracking
Understand climate-related risk across our portfolios and support our customers to adapt and build resilience	Update ESG risk training and expanded access.	On track
	Undertake annual climate risk assessments and publish the results in our annual Climate Report.	On track
	Board and Executive Team members provided with specifically developed climate training by the end of FY2023.	On track
	Develop banking sector scenarios for most material sectors by the end of 2022, to be used in the FY2023 Climate Report.	On track
	Develop quantitative Sustainability Risk Appetite (RAS) measures for ongoing monitoring.	More to do
	Incorporate specific ESG and climate metrics into Executive scorecards by end of FY2023.	More to do
	Undertake a review of ESG policy and checklists, with updates implemented by the end of 2023.	On track
Continue to actively reduce our emissions across our operations and supply chain	Reduce waste to landfill by 60% by 2025 from a 2019 baseline.	On track
	Reduce operational emissions by 60% by the end of 2025 from a 2019 baseline.	On track
	Toitū carbonzero certified for our operations by the end of FY2022.	Complete
	Set a reduction target for our supply chain emissions by the end of FY2023.	More to do
	Review our Group Environmental Reporting and Offset Management Policy and ensure it aligns with current best practice by the end of FY2023.	On track
	Source renewable electricity equivalent to 100% of our electricity needs.	More to do

This Report reflects BNZ's evolving understanding of climate risks and opportunities to BNZ and its customers. Important limitations, assumptions and disclaimers are contained throughout and also in the disclaimer at the beginning of this report.

Appendix A: List of ANZSIC codes aligned to portfolios

Portfolio	1993 Level 4 ANZSIC	1993 Level 4 ANZSIC Description
Agriculture: Dairy	0130	Dairy Cattle Farming
Agriculture: Non-dairy	0111	Plant Nurseries
	0112	Cut Flower and Flower Seed Growing
	0113	Vegetable Growing
	0114	Grape Growing
	0115	Apple and Pear Growing
	0116	Stone Fruit Growing
	0117	Kiwi Fruit Growing
	0119	Fruit Growing n.e.c.
	0121	Grain Growing
	0122	Grain-Sheep and Grain-Beef Cattle Farming
	0123	Sheep-Beef Cattle Farming
	0124	Sheep Farming
	0125	Beef Cattle Farming
	0141	Poultry Farming (Meat)
	0142	Poultry Farming (Eggs)
	0151	Pig Farming
	0152	Horse Farming
	0153	Deer Farming
	0159	Livestock Farming n.e.c.
	0161	Sugar Cane Growing
	0162	Cotton Growing
	0169	Crop and Plant Growing n.e.c.

Portfolio	1993 Level 4 ANZSIC	1993 Level 4 ANZSIC Description
Power	3610	Electricity Supply
Oil and Gas	1200	Oil and Gas Extraction
	1512	Petroleum Exploration Services
	1520	Other Mining Services
	2510	Petroleum Refining
	2532	Industrial Gas Manufacturing
	3620	Gas Supply
	4521	Petroleum Product Wholesaling
	6501	Pipeline Transport
Commercial Real Estate	7711	Residential Property Operators
	7712	Commercial Property Operators and Developers
Transport	6110	Road Freight Transport
	6121	Long-Distance Bus Transport
	6122	Short-Distance Bus Transport (Including Tramway)
	6123	Taxi and Other Road Passenger Transport
	6200	Rail Transport
	6301	International Sea Transport
	6302	Coastal Water Transport
	6401	Scheduled International Air Transport
	6402	Scheduled Domestic Air Transport
	6642	Road Freight Forwarding
	6643	Freight Forwarding (Except Road)

Finding a way.

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