



Statement of  
Performance  
Expectations  
2021/22

REANNZ

## CONTENTS /

Forward from the Board	4
About REANNZ	5
Our Purpose	6
National Network Map	8
Global Network Map	10
The Nature and Scope of REANNZ	12
REANNZ Strategy on a page	16
Priorities and Major Initiatives for 2021/22	18
Advanced Network	22
Collaboration	24
Business Performance	26
Summary of 2021/22 Performance Measures	27
Prospective Financial Statements	29
Nature and purpose of Prospective Financial Statements	32
Notes to the Prospective Financial Statements	32

Presented to the House of Representatives under Sections 150–157 of the *Crown Entities Act 2004*.

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REANNZ provides the pathways and connections with global research leaders so that by 2027, New Zealand will be a global innovation hub, a world class generator of new ideas for a productive, sustainable and inclusive future.

# FOREWORD FROM THE BOARD /

On behalf of the Board we are pleased to provide REANNZ's Statement of Performance Expectations 2021/22. The priorities and initiatives outlined in this document support [REANNZ's ambitions described in the Statement of Intent 2021-24](#). It acts as a continuation of the progress that has been made in REANNZ's development as a delivery focused, member centric organisation.

REANNZ operates and supports a specialist high-performance digital network that is engineered to meet the unique demands of scientists, researchers, innovators and educators. With access to large data transfer capabilities and network tools that encourage multi-institutional collaboration, New Zealand has access to the world's unique science facilities and global collaboration opportunities. eResearch infrastructure is one of the pillars that upholds the Government's aims for the Research Science and Innovation (RSI) community.

To do this, REANNZ works with community partners to strengthen connections across the sector, at a people level and an infrastructure level. The team work to ensure that New Zealand's researchers are able to leverage the tools and services that they need, to support research impact for the benefit of New Zealand and on a global scale.

This year has seen solid progress towards REANNZ's development as an organisation that is focused on member engagement and effective delivery, with partnerships and purposeful engagement with the wider NREN community benefitting the membership and research organisations across the country. This increasing engagement across

multiple levels within the community is a continued area of focus for REANNZ.

REANNZ's commitment to its members and stakeholders is demonstrated through the sustainable business approach, well managed costs and the development of a funding model that will support a future fit network. Applying this across the business to include REANNZ's services and offering will also be a priority for the organisation's initiatives in the coming year.

To ensure that REANNZ is well equipped to do this going forward, the organisation will implement a national network review and strategy. By providing this network platform, REANNZ aims to create a landscape without barriers to the exchange and development of ideas and knowledge, harnessing research, education and innovation to advance the wellbeing of New Zealanders into the future.

Despite the challenges caused by COVID-19 over the last year, the science, research and innovation community has demonstrated its commitment to data-intensive research collaboration, nationally and internationally, through their essential contributions to New Zealand's response and collaboration efforts. As an essential service, REANNZ provided a stable platform for research and collaboration.

The organisation will continue to leverage the lessons learned during this time to build a more resilient, future focused operation. REANNZ will ensure that it supports its members' and their changing needs as the extended impact of the COVID-19 pandemic becomes clearer over time.

# ABOUT REANNZ /

REANNZ, the Research and Education Advanced Network New Zealand, is New Zealand's National Research and Education Network (NREN).

REANNZ is a not-for-profit Crown-owned company under Schedule 4A of the Public Finance Act 1989. Shareholding Ministers are the Minister of Finance and the Minister of Research, Science and Innovation.

An independent Board of Directors appointed by the Ministers provides governance. REANNZ is funded through MBIE's Strategic Science Investment Fund (SSIF) and by member organisations.

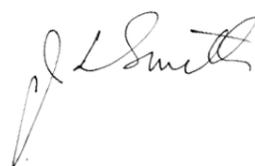
REANNZ operates and supports a specialist high-performance digital network that is engineered to meet the unique performance demands of scientists, researchers, innovators and educators. It is used by researchers to access, move and share data-intensive research across the country and internationally, enabling them to collaborate and contribute to research projects that benefit New Zealand and the world.

REANNZ engineers and the engagement team work closely with our member's technology teams and researchers to support their use and access to the network. REANNZ engineers develop solutions that resolve technical issues, support a member's network infrastructure needs and facilitate the uninterrupted transfer of research data. REANNZ offers a range of services and products specifically designed to meet the needs of end users operating in these specialist environments.

REANNZ is committed to the principles of Te Tiriti o Waitangi. REANNZ's goal is to foster meaningful connections between Māori, the research and innovation system, and to grow opportunities for Māori science and innovation.

New Zealand is part of a global partnership of over 120 NRENs that have the same commitment to high performance; allowing REANNZ users to collaborate with their peers worldwide and ensuring their connectivity experience is seamless from source to destination. REANNZ is proud to be the smallest NREN to have a seat at the table of the international NREN Chief Executive's Forum. REANNZ intends to grow its recognition as an international NREN and will work with international networks and connections in building public value for New Zealand.

Through these partnerships with the global NREN community, REANNZ is participating in the development of next generation technology at a global scale and bringing this knowledge to New Zealand. REANNZ also contributes to sharing the unique understanding developed in New Zealand's research environment to the global research community.



**Janine Smith MNZM**  
Chair



**Ross Peat**  
Deputy Chair

30 June 2021

# OUR PURPOSE /



## Managing the advanced network, tools and services that support New Zealand research

REANNZ provides the pathways and connections to global research partners and institutions that work with New Zealand's scientists, researchers and academic institutions.

Globally, research is becoming increasingly data-intensive. Research conducted in New Zealand is world class, with continued innovation in areas like climate change, healthcare and agriculture. Access to the REANNZ network, team and services enables the generators of ideas and research projects to collaborate on and contribute to world-leading research for the benefit of New Zealand and the world.



## Moving research data at speed and scale

The underlying network infrastructure is anchored in connections, be that at a people level or an infrastructure level. Today's research is becoming increasingly distributed and data-intensive and the scale of global collaboration is increasing, especially in light of the COVID-19 pandemic. New Zealand's isolation should not limit its ability to participate in collaboration and contribute to world class research. In fact, it drives the need for continued, reliable connectivity so that the work of New Zealand's researchers is accessible to the world.



## Mobilising knowledge and global collaboration

REANNZ is an active member of the international community made up of over 120 National Research and Education Networks (NRENs). REANNZ and these international partners have agreed processes, protocols, and settings that enable them to collectively provide a seamless international research infrastructure that allows traffic to transit to, or through, their countries.

## NRENs are....

As an NREN, REANNZ supports research, productivity and collaboration through data movement at a scale not commonly found outside of the research and education sector. This community works together on a not-for-profit basis, collaborating for the benefit of their users and stakeholders to support global research.

REANNZ acts as a fundamental part of the science, research and innovation system in New Zealand, connecting people, knowledge and capability to support developing ideas and contribute back to the sector.

From a New Zealand perspective, data-intensive research provides a significant value opportunity for the research, science and innovation community. Increasing the amount of internationally connected and data driven research supports the sector's impact and effectiveness in a changing research environment.

There are four common denominators for all NRENs, they:

1. provide services for a specialist user or member group,
2. have a shared mission to provide services and infrastructure for the good of their communities and to reduce costs through agreements and protocols,
3. provide national and international connectivity at a minimum, and
4. provide additional services that support and enable effective use of the advanced networks.

## REANNZ NATIONAL NETWORK MAP

NB lines are indicative only

- 100Gbps national backbone network
- 20Gbps and under
- Hawaiki Capacity

These lines are indicative only and do not show precise routes.



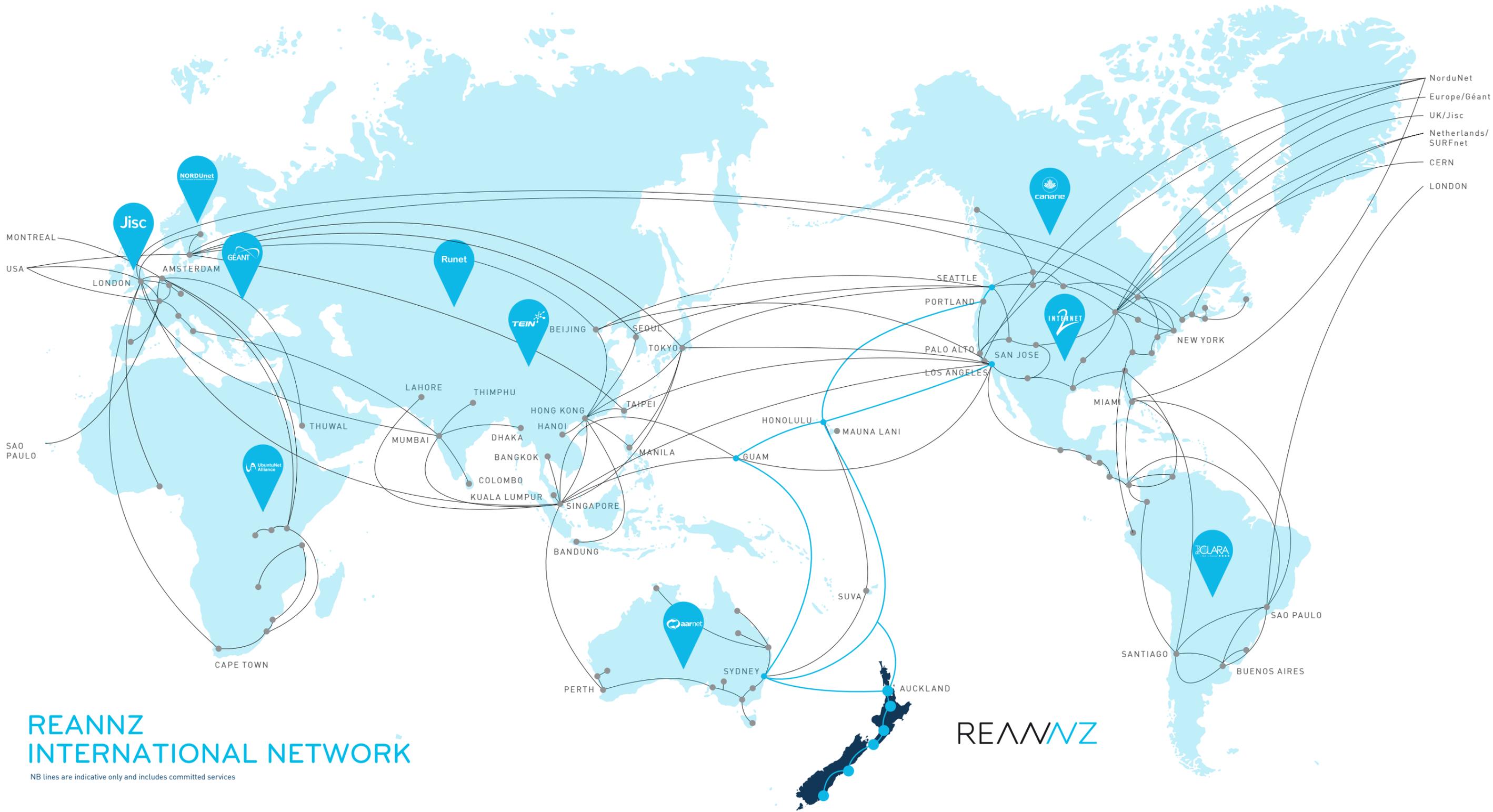
REANNZ is a membership organisation, funded by them and MBIE's Strategic Science Investment Fund (SSIF).

REANNZ's members include New Zealand's Universities and Crown Research Institutes, Polytechnics, Institutes of Technology and Wānanga and other research and education organisations.

In order to help facilitate its mission, REANNZ also connects organisations that provide services of benefit to the membership base, such as providers of cloud services, cloud-based applications and data storage facilities. This both decreases the cost to members to access relevant content by delivering it across the REANNZ network instead of over commercial carriers. This improves the quality of their user experience by ensuring it is accessible through a high capacity, quality network.

Additionally, REANNZ connects innovative businesses to the network, allowing them to work directly with the science and research institutions that are assisting with product development or commercialisation.

# GLOBAL RESEARCH AND EDUCATION COMMUNITY /



**REANNZ**  
INTERNATIONAL NETWORK

NB lines are indicative only and includes committed services

These lines are indicative only and do not show precise routes.

# THE NATURE AND SCOPE OF REANNZ /

The strategic direction laid out in this Statement of Performance Expectations reflects the Government's priorities for REANNZ, the infrastructure needs of the research, science and innovation sector and how this contributes to the long-term economic outcomes for all New Zealanders.

## VISION /

To support and enable data intensive research in New Zealand.



## MISSION /

Design, build and operate New Zealand's high-performance network and provide supporting services that enable members and users to connect and collaborate with each other and the global NREN ecosystem.



## Values and Driving Principles

The values and driving principles that REANNZ uphold are fundamental to how the organisation operates and how it aims to achieve its vision.

REANNZ's values are:

- > **Being fair, open and respectful** – To be open minded and respectfully discuss and debate thoughts, ideas and plans to broaden and further inform beliefs and approaches. To be a reliable, stable, non-commercial and neutral partner for members.
- > **Being good partners** – Collaboration and strategic partnerships are fundamental to improving science and research outcomes for New Zealand. REANNZ is developing partnerships that benefit all parties and increase public value.
- > **Exercising responsible stewardship** – Careful and responsible management of the assets and resources that have been entrusted to the care of REANNZ.

REANNZ's driving principles are:

- > Technical excellence
- > Focus on the important
- > Leverage off strengths for the common good
- > Be flexible and adaptive
- > Be outward looking and curious

## Outcomes

REANNZ's vision is to be achieved by delivering on outcomes and strategic intentions.

REANNZ's long-term outcome is:

REANNZ provides the pathways and connections with global research leaders so that by 2027, New Zealand will be a global innovation hub, a world class generator of new ideas for a productive, sustainable and inclusive future.

In order achieve this long-term outcome the following deliverables articulate what REANNZ will provide in the short to medium term:

- › **Advanced Network** – Establish and operate the New Zealand Research and Education Advanced Network.
- › **Collaboration** – Support and enable New Zealand’s connection with the global research, science and innovation systems.
- › **Business Performance** – Ensure New Zealand has an affordable and sustainable NREN business.

## Assessing our performance

In assessing the success of our work outputs, we measure and monitor:	
<b>Our outcomes</b>	<b>Outcome success measures</b> report on global trend indicators and are indicative of REANNZ’s contribution towards New Zealand being at the forefront of digitally advanced science, research, education and innovation.
<b>Our impacts</b>	<b>Impact measures</b> indicate how effective we have been in enabling: <ul style="list-style-type: none"> <li>› The operation of the New Zealand Research and Education Advanced Network e.g. researcher’s ability to conduct data-intensive research.</li> <li>› Collaboration with global research, science, education and innovation systems.</li> <li>› REANNZ business performance</li> </ul>
<b>Our performance</b>	<b>Performance monitoring</b> tells us how well our work achieves our outputs: <ul style="list-style-type: none"> <li>› The provision of a high quality NREN network.</li> <li>› An actively engaged community.</li> <li>› A network designed to meet member’s needs.</li> </ul> and so, we undertake performance monitoring, covering: <ol style="list-style-type: none"> <li>1. Quality</li> <li>2. Quantity</li> <li>3. Timeliness</li> <li>4. Cost-effectiveness</li> </ol>

## Strategic Intentions

The vision, values and outcomes are intended to be enduring and remain largely constant over time. REANNZ’s strategic intentions will change over time to reflect the medium-term areas of focus for the organisation.

Strategic intentions are the areas where efforts are being concentrated to deliver the vision and outcomes. These are:

- › **Advanced Network:**
  - grow international recognition of REANNZ as a high-quality NREN,
  - improve the suite of applications and reports that enrich the end-to-end use of the network.
- › **Collaboration:**
  - improve member and user outcomes and experiences,
  - increase key partnership arrangements that create value for the REANNZ network.
- › **Business Performance:**
  - sustainable funding streams and business performance improvements developed and implemented.

# REANNZ STRATEGY /

**OUR VISION /** To support and enable data intensive research in New Zealand.

## OUTCOMES to succeed

### REANNZ Long Term Outcome

REANNZ provides the pathways and connections with global research leaders so that by 2027, New Zealand will be a global innovation hub, a world class generator of new ideas for a productive, sustainable and inclusive future

### OUTCOME SUCCESS MEASURES

- Maintain position in the Top 500 Universities per GDP in the OECD Science, Technology & Industry Outlook
- NZ maintains its ranking for "university-industry collaboration in R&D" in the WEF global competitiveness index
- Maintain NZ ranking for "capacity for innovation" in the WEF competitiveness index.

## 2021/2022 Initiatives

### Advanced Network

National Network  
Review and Strategy

### Collaborations

Deepen REANNZ's understanding and ability to better tailor services to support our members' outcomes

### Business Performance

Futureproofing  
REANNZ

## IMPACTS that enable

### Impact measures:

- Member and user satisfaction
- Uptake of international access federated services

### Impact measures:

- Member satisfaction
- Strategic Alliance Memorandum of Understandings

### Impact measures:

- Member satisfaction

## OUTPUTS to deliver

### High-quality network performance

- Bandwidth
- Packet delay variation
- Packet Loss

### Member engagement

- Sharing of case studies
- Knowledge sharing sessions
- Issues resolved in a timely manner

### Cost effective measures

- Better connected members  
(signed Optional Service Agreements)

# PRIORITIES AND MAJOR INITIATIVES FOR 2021/22

2021/22 priorities and major initiatives contribute to the delivery of the long-term outcomes for REANNZ and represent the areas where the organisation's efforts will be concentrated during the upcoming year.

## 1 /

### National Network Review and Strategy

#### GOAL:

In order to remain current with technology, demands, and the market, REANNZ must periodically undertake a programme of review and strategy for its network investment. This ensures REANNZ remains well equipped to support the next generation of research, innovation and education activity. The future network needs to keep pace with emerging technological trends and industry advancements all the while ensuring that the requirements of the education and research community are met.

#### PURPOSE:

The current national backbone has been in place since 2013 for the national connectivity between REANNZ sites, and since 2016 for the equipment within the REANNZ sites. Keeping the network at its best requires constant planning, care and maintenance. It also requires REANNZ to remain experts in emerging technology trends, particularly in the activities and needs of the global research, innovation and education community.

In the upcoming year REANNZ will undertake the first phase of this future network which will include:

- › Work with the multiple stakeholders from within REANNZ, the membership, and the shareholder to develop a strategic approach and agree a set of requirements for the connectivity between REANNZ locations.
- › Undertake a requirement driven RFP process for connectivity between REANNZ locations with the selection criteria and weighting being agreed by the multiple stakeholders.
- › Award the contract and undertake an implementation plan as required.
- › In the longer term the focus will move from the connectivity between REANNZ locations to how those locations are constructed. This will involve a similar multi-stakeholder engagement for requirements, moving on to RFP, and then ultimately implementation.
- › All the while maintaining the network performance and availability, burst capacity and low thresholds for packet loss.

## 2 /

### Deepen REANNZ's understanding and ability to better tailor services to support our members' outcomes

#### GOAL:

To ensure REANNZ truly understands the needs of members and provide them with the best possible solutions to allow efficient flow of research data and collaboration.

#### PURPOSE:

REANNZ engagement strategy is to deepen the relationship with members and work with members to help grow and support a productive research and education community. This will enable members to interact more effectively with each other and have access to the tools and resources that they need to be successful, whether the projects they are collaborating on are located in New Zealand or internationally.

In the coming year, REANNZ will work with members to:

- › Maintain and continue to build up relationships with members across multiple layers of their organisations.
- › Continue to explore and implement offerings that add value to members to enable them to connect and collaborate within the research, education and innovation sector.
- › Maintain New Zealand's reputation internationally as a highly capable and interconnected research and education ecosystem.
- › Support our members to build their capability to solve data-transfer challenges and further increase use of the network to support research impact.

## 3 /

### Futureproofing REANNZ

#### GOAL:

To continuously improve the quality and efficiency, communication and collaboration and innovation across REANNZ through building on the experience and knowledge gained during the COVID-19 pandemic.

#### PURPOSE:

REANNZ is committed to offering high performance services and solutions to its members. To be able to offer the best service to members, it is important that REANNZ firstly ensures that its internal systems are robust and reduce concentrated risk.

During the COVID-19 pandemic, REANNZ pulled together as a business and continued to provide a stable platform for research and collaboration. Looking forward, REANNZ will leverage what the organisation has learnt during this time to build a more resilient operation going forward.

The organisation must consider its ability to minimise the impact of unforeseen events that could disrupt the network and services, for example natural hazard events or security breaches, to ensure that REANNZ's offering meets the dynamic needs of researchers and continues to achieve the availability requirements necessary to their work.

In the coming year REANNZ will:

- › Implement a security roadmap to ensure that REANNZ is making best efforts to protect the national network.
- › Drive operational stability and efficiency by automating routine processes where possible, while maintaining a focus on supporting the researcher's dynamic needs.
- › Review and enhance the Business Continuity Plan (BCP) to include natural hazard scenario planning.
- › Continue to develop teams outside of the Wellington region.

# ADVANCED NETWORK /

## Grow international recognition of REANNZ as high-quality National Research and Education Network (NREN)

REANNZ operates and develops New Zealand's NREN. This world-class network is critical infrastructure that supports today's data-intensive, globally collaborative research.

REANNZ was established primarily to serve the advanced and unique needs of the science and research community in New Zealand. Their needs are complex and driven by the very foundation of how science and research is conducted.

Additionally, there are unique challenges in the co-ordination and supply of data-transfer services across this community that do not exist elsewhere.

To meet these needs, the REANNZ Network is designed to deliver predictable, low risk and high-quality outcomes to researchers and scientists, every time that they use it. Key features include:

- › Scalability – the network must have the ability to meet the changing needs of its users and members.
- › Coverage/reach – access needs to be available wherever the researcher is or where the research is undertaken.
- › Capacity – headroom needs to be maintained across the network to support high-volume data transfers on demand.
- › Resilience – the network is designed to provide and maintain very high levels of service in the face of faults and challenges to normal operations.

As New Zealand's designated NREN, REANNZ is an active member of the global community of over 120 national and regional research and education networks. Because of this global network of NRENs, New Zealand researchers gain access to a worldwide, multi-billion-dollar research and education infrastructure, dedicated to the pursuit of science and research.

## Improve the suite of applications and reports that enrich the end-to-end use of the network

REANNZ provides additional services, applications and reporting that support and enable effective use of the advanced network. Applications and reporting provide authentication, identity federation and reporting for further networking with global NREN and research partners.

REANNZ provides tools that facilitate collaboration between institutions, specialised services that enhance members' ability to use the network, and products and services that enhance the effectiveness and efficiency of members' activities.

## How is performance tracked?

The following key measures have been selected to demonstrate the extent to which REANNZ is making a difference:

Performance Measure	Actual 2019/20	Expected 2020/21	Target 2021/22	Why this measure is important
<b>Impact Measure:</b>				
<b>Member and User satisfaction</b> The proportion of network users that consider the REANNZ network essential or valuable to their work	100%	100%	Greater than 80%	Members join up to the REANNZ network to access a high quality, reliable product that is able to carry big bursts of data, as and when required.
<b>Output Measures:</b>				
<b>Bandwidth Available</b>				This represents the actual bandwidth that is available between two end-points on a network. Increasing network capacity (speed) supports a higher number of connections, increased traffic levels and more collaborative work. We must continually balance the need to keep the network ahead of our members' demands while remaining cost effective to ensure the service remains capable of supporting the most demanding data-intensive collaborations.
- national backbone capacity	100Gbp	100Gbp	100Gbp	
- international network capacity	60Gbp	60Gbp	60Gbp	
<b>Packet delay variation</b>	N/A	99.9%	At least 99.9% of hourly measurements across the core network have less than 20ms of packet delay variation	Packet delay variation, often known as 'jitter,' is particularly an issue for real-time services such as voice or video where a human user is involved. High packet delay variation can lead to these services being unusable.
<b>Packet Loss</b>	0.0000004993%	0.0000001596%	Less than 0.0001%	Packet delivery is a key element of network quality and one of the defining features of research and education networks. A major differentiator of research and education networks is the aim to eliminate packet loss as it is catastrophic for large data transfers typical of our user groups.
<b>Increased use of international access federated services</b>				These services allow participants to automatically join the networks of any other participating institutions, anywhere in the world. Use of these services is an indicator of the quantity of services provided and their value to both our members and visitors to New Zealand from within the global research and education community.
- number of device connections made to eduroam by NZ users at other sites in NZ or Overseas	100,100	110,000	120,000	
- number of members using Tuakiri and eduGain	15	22	25	

# COLLABORATION /

## Improve member and user outcomes and experiences

REANNZ is a member focused organisation, specialising in meeting the unique needs of its community. To do this effectively, REANNZ must have close relationships with its members, to tailor solutions and support for optimal results.

Value is delivered not only through the specialist services that support users at individual institutions, but also through the communities of practice fostered by bringing people together across sectors and disciplines to solve research and science challenges.

The COVID-19 pandemic will have an ongoing impact on our members, both financially and how collaborative research and innovation is undertaken. REANNZ works closely with members and users to understand and support their changing needs.

## Increase key partnership arrangements that create value for the REANNZ network

New Zealand is part of a global partnership of over 120 NRENs that have the same commitment to high performance; allowing REANNZ users to collaborate with their peers worldwide and ensuring their connectivity experience is seamless from source to destination.

Through these partnerships with the global NREN community, REANNZ is participating in the development of next generation technology at a global scale and bringing this knowledge to New Zealand. REANNZ also contributes to sharing the unique understanding developed in New Zealand's research environment to the global research community.

REANNZ is proud to be the smallest NREN to have a seat at the table of the international NREN Chief Executive's Forum. REANNZ intends to grow its recognition as an international NREN and will work with international networks and connections in building public value for New Zealand.

Computing is now essential in many areas of science in New Zealand and institutions are relying on supercomputers, cloud service providers and cloud-based applications to control costs and achieve their strategic objectives. Whether it's connecting universities to their online payroll provider or facilitating scientists' access to cloud computing resources, networks like REANNZ are critical components of the research and education 'supply chain'.

## How is performance tracked?

The following key measures have been selected to demonstrate the extent to which REANNZ is making a difference:

Performance Measure	Actual 2019/20	Expected 2020/21	Target 2021/22	Why this measure is important
<b>Impact Measures:</b>				
<b>Member satisfaction and engagement</b>	N/A	New survey providing benchmark for future years. Survey will be performed Q4	Greater than 80%	A new customer satisfaction survey developed during 2020/21 to provide insights on how well REANNZ is fulfilling the needs of its members and users to enable data intensive research.  The first survey undertaken during 2020/21 establishes the benchmark against which improvement actions can be measured.
<b>Strategic Alliances memorandum of understanding</b>	N/A	2 Memorandum of Understanding agreed.	2 Memorandum of Understanding agreed.	REANNZ will develop and enter into a Memorandum of Understanding with each strategic alliance which will signal the willingness to work together and how this partnership will proceed and operate.
<b>Output Measures:</b>				
<b>Issues resolution timeliness</b>	80%	80%	Greater than 80%	Addressing any issues, queries or requests from our members in a timely manner, supports and promotes research and science.
<b>Case studies</b>	4 Case studies	4 Case studies	4 Case studies	Distributing case studies that communicate REANNZ's value by demonstrating how members use the network and services and providing examples of collaboration through moving and sharing data and the impact achieved.
<b>Knowledge Sharing sessions</b>	N/A	- 4 presentations - 3 REANNZ Connect - knowledge sharing sessions - 15 Member Site visits	- 4 presentations at relevant conferences / workshops - 8 REANNZ Connect -knowledge sharing sessions - Site visits to the 16 core Universities and CRI's	Increasing awareness of REANNZ's high-performance network, data transfer capabilities and value throughout our membership base. Supporting research and community collaboration.

# BUSINESS PERFORMANCE /

## Sustainable funding streams and business performance improvements developed and implemented

REANNZ is a dynamic organisation, continually keeping up with technological advancements and member's needs. It is important that REANNZ operates modern, reliable and secure systems.

REANNZ wants to develop and sustain high performing, member-focused teams. This will strengthen the relationship with our members, allowing them to fully utilise the NREN to focus on collaboration and innovation.

A strong financial position enables the provision of high-quality services and products that members and users expect. REANNZ must continue to improve the member and user experience and outcomes while increasing financial sustainability and membership fee stability.

## How is performance tracked?

The following key measures<sup>1</sup> have been selected to demonstrate the extent to which REANNZ is making a difference:

Performance Measure	Actual 2019/20	Expected 2020/21	Target 2021/22	Why this measure is important
<b>Impact Measure:</b>				
<b>Member satisfaction</b>				
The portion of members who believe the REANNZ network successfully fulfils the needs of their organisation.	N/A	N/A	New survey providing the benchmark for future years	A new member satisfaction survey question to be developed during 2021/22. This will provide insights on how well REANNZ is fulfilling the needs of its members and users.  The first survey undertaken during 2021/22 will establish the benchmark against which improvement actions can be measured.
<b>Output Measure:</b>				
<b>Better Connected members</b>	N/A	N/A	Number of Optional Service Agreements signed	Supporting members will lead to a deeper understanding of members needs this will enable us to help members build capability and solve data-transfer challenges.

<sup>1</sup> These performance measures vary from the Statement of Intent 2021-24. This year's measures are externally focused rather than operationally focused like the previous measures.

# SUMMARY OF 2021/22 PERFORMANCE MEASURES /

The following table provides all of the performance measures together.

Contributing to Outcome	Performance Measure	Actual 2019/20	Expected 2020/21	Target 2021/22
<b>Impact measures:</b>				
Advanced Network	<b>Member and User satisfaction</b> the proportion of network users that consider the REANNZ network essential or valuable to their work	100%	100%	Greater than 80%
Collaboration	<b>Member satisfaction and engagement</b> The proportion of members that consider the REANNZ network enables data intensive research.	N/A	New survey providing benchmark for future years. Survey will be performed Q4	Greater than 80%
	<b>Strategic Alliances memorandum of understanding</b>	N/A	2 Memorandum of Understanding agreed.	2 Memorandum of Understanding agreed.
Business Performance	<b>Member satisfaction</b> The proportion of members who believe the REANNZ network successfully fulfils the needs of their organisation	N/A	N/A	New survey providing the benchmark for future years
<b>Output measures:</b>				
Advanced network	<b>Bandwidth Available</b>			
	- national backbone capacity	100 Gbps	100 Gbps	100 Gbps
	- international network capacity	60 Gbps	60 Gbps	60 Gbps
	<b>Packet delay variation</b>	N/A	99.9%	At least 99.9% of hourly measurements across the core network have less than 20ms of packet delay variation

Contributing to Outcome	Performance Measure	Actual 2019/20	Expected 2020/21	Target 2021/22
	<b>Packet Loss</b>	0.0000004993%	0.0000001596%	Less than 0.0001%
	<b>Increased use of international access federated services</b>			
	- number of device connections made to eduroam by NZ users at other sites in NZ or Overseas	100,100	110,000	120,000
	- number of members using Tuakiri and eduGain	15	22	25
Collaboration	<b>Issues resolution timeliness</b> the proportion of members that consider any issues are resolved in a timely manner	80%	80%	Greater than 80%
	<b>Case studies</b>	4 Case studies	4 Case studies	4 Case studies
	<b>Knowledge Sharing sessions</b>	N/A	- 4 presentations - 3 REANNZ Connect - knowledge sharing sessions - 15 Member Site visits	- 4 presentations at relevant conferences / workshops - 8 REANNZ Connect -knowledge sharing sessions - Site visits to the 16 core Universities and CRI's
Business Performance	<b>Better Connected members</b>	N/A	N/A	Number of Optional Service Agreements signed

# PROSPECTIVE FINANCIAL STATEMENTS /

## Research and Education Advanced Network New Zealand Limited Prospective Statement of Comprehensive Revenue and Expense for the Year ending 30 June

Forecast 2021 \$ 000		Budget 2022 \$ 000
	<b>Revenue</b>	
3,000	Grant revenue	5,000
6,202	Network revenue	6,216
4,282	Other revenue	3,892
223	Interest revenue	70
<b>13,707</b>	<b>Total Revenue</b>	<b>15,178</b>
	<b>Network Expenses</b>	
2,160	Depreciation and amortisation	1,512
1,846	Employment expenses	2,837
8,336	Network operating expenses	9,264
<b>12,342</b>	<b>Total Network Expenses</b>	<b>13,613</b>
<b>1,365</b>	<b>Gross Surplus / (Loss)</b>	<b>1,565</b>
	<b>Less:</b>	
	<b>Operating Expenses</b>	
35	Audit	38
120	Depreciation and amortisation	135
144	Directors fees	180
2,112	Employment expenses	2,032
587	Other operating expenses	1,082
164	Professional services	338
69	Operating leases	548
52	Travel expenses	260
<b>3,283</b>	<b>Total Operating Expenses</b>	<b>4,613</b>
<b>(1,918)</b>	<b>Surplus / (Deficit) excluding gains / (losses)</b>	<b>(3,048)</b>
(575)	Foreign currency gains / (losses)	-
<b>(2,493)</b>	<b>Surplus / (Deficit)</b>	<b>(3,048)</b>
-	Other comprehensive revenue	-
<b>(2,493)</b>	<b>Total Comprehensive Revenue and Expense</b>	<b>(3,048)</b>

Research and Education Advanced Network New Zealand Limited

**Prospective Statement of Financial Position  
As at 30 June**

Forecast 2021 \$ 000		Budget 2022 \$ 000
<b>ASSETS</b>		
<b>Current Assets</b>		
1,813	Cash and cash equivalents	2,421
1,960	Receivables and debtors	2,103
21,000	Investments	18,000
-	Derivative financial instruments	157
347	Prepayments	329
2,763	Prepaid network expenses	1,992
<b>27,883</b>	<b>Total Current Assets</b>	<b>25,002</b>
<b>Non-Current Assets</b>		
7,120	Property, plant and equipment	7,464
157	Derivative financial instruments	-
15,712	Prepaid network expenses	15,691
<b>22,989</b>	<b>Total Non-Current Assets</b>	<b>23,155</b>
<b>50,872</b>	<b>Total Assets</b>	<b>48,157</b>
<b>LIABILITIES</b>		
<b>Current Liabilities</b>		
228	Accounts payable and accrued expenses	669
231	GST payable	106
159	Employee entitlements	159
2,094	Revenue in advance	2,124
33	Derivative financial instruments	-
-	Deferred lease incentive	20
<b>2,745</b>	<b>Total Current Liabilities</b>	<b>3,078</b>
<b>Non-Current Liabilities</b>		
67	Revenue in advance	3
-	Deferred lease incentive	64
<b>67</b>	<b>Total Non-Current Liabilities</b>	<b>67</b>
<b>2,812</b>	<b>Total Liabilities</b>	<b>3,145</b>
<b>48,060</b>	<b>Net Assets</b>	<b>45,012</b>
<b>EQUITY</b>		
16,001	Contributed capital	16,001
32,059	Accumulated surplus / (deficit)	29,011
<b>48,060</b>	<b>Total Equity</b>	<b>45,012</b>

Research and Education Advanced Network New Zealand Limited

**Prospective Statement of Cash Flows  
for the Year ending 30 June**

Forecast 2021 \$ 000		Budget 2022 \$ 000
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
Cash was provided from (applied to)		
3,000	Strategic Science Investment Fund	4,833
6,539	Network revenue	6,216
4,208	Other revenue	3,900
328	Interest received	70
19	Net GST	168
(9,584)	Payments to suppliers & employees	(11,986)
(4,249)	Prepayments for network connectivity	(3,579)
(421)	Realised gains /(losses) on foreign currency	(33)
<b>(160)</b>	<b>Net Cash Flow from Operating Activities</b>	<b>(411)</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
Cash was provided from (applied to)		
(332)	Purchase of plant & equipment	(1,981)
140	Sale of plant & equipment	-
-	Term deposit investments	3,000
<b>(192)</b>	<b>Net Cash Flow from Investing Activities</b>	<b>1,019</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
Cash was provided from (applied to)		
<b>-</b>	<b>Net Cash Flow from Financing Activities</b>	<b>-</b>
<b>(352)</b>	<b>Net Increase/(Decrease) in Cash Held</b>	<b>608</b>
2,165	Cash at beginning of the year	1,813
<b>1,813</b>	<b>Cash at end of year</b>	<b>2,421</b>
Represented by:		
<b>1,813</b>	<b>Cash at Bank</b>	<b>2,421</b>

# Nature and purpose of prospective financial statements

The Prospective Financial Statements have been prepared to the best of our knowledge and belief as an indication of REANNZ's future financial performance. Actual financial results achieved for the period covered may vary from the information presented, and potentially in a material manner.

The purpose of the Prospective Financial Statements is to inform readers of this Statement of Performance Expectations of REANNZ's best estimate of its future financial performance at the date of publication, and to comply with the company's specific reporting and disclosure obligations. The statements may not be suitable for other purposes.

## Notes to the Prospective Financial Statements

### Significant Assumptions

The following assumptions have been made in the preparation of the prospective financial statements:

- There will be no change to our core membership base.
- Transactions paid for in United States dollars (USD) have been converted to New Zealand dollars at a rate of 0.67 USD to 1 NZD.
- Transactions paid for in Australian dollars (AUD) have been converted to New Zealand dollars at a rate of 0.90 AUD to 1 NZD.
- The short-term deposit rate is 0.35% per annum.

### Reporting Entity

The reporting entity is Research and Education Advanced Network New Zealand Limited ('REANNZ'), a Crown entity as defined by the Crown Entities Act 2004 and a New Zealand incorporated company. As a Crown entity, REANNZ's ultimate parent is the New Zealand Crown.

REANNZ operates and supports a specialist high-performance digital network that is engineered to meet the unique performance demands of scientists, researchers, innovators and educators. As such, REANNZ's aim is to provide services for the ultimate benefit of the New Zealand public, on a not-for-profit basis.

Accordingly, REANNZ has designated itself as a Public Benefit Entity ('PBE') for the purposes of PBE accounting standards with reduced disclosures.

### Basis for preparation

#### Statement of compliance

The Prospective Financial Statements have been prepared in accordance with the Crown Entities Act 2004, and with generally accepted accounting practice in New Zealand (NZ GAAP).

These Prospective Financial Statements comply with PBE accounting standards, which include PBE FRS 42 Prospective Financial Statements.

REANNZ has elected to report in accordance with Tier 2 PBE accounting standards with reduced disclosure requirements and is eligible to report as a Tier 2 reporting entity on the basis that it does not have public accountability and is not large.

#### Preparation and rounding

The Prospective Financial Statements are presented in New Zealand dollars, rounded to the nearest thousand (\$000). The functional currency of REANNZ is New Zealand dollars.

### Significant accounting policies

Accounting policies are selected and applied in a manner that ensures that the resulting financial information satisfies the concepts of relevance and reliability. REANNZ accounting policies, therefore, are designed to report the substance of the underlying transactions undertaken by the entity.

The following significant accounting policies have been adopted in the preparation and presentation of the Prospective Financial Statements.

### Goods and services tax (GST)

These Prospective Financial Statements are prepared on a GST-exclusive basis except for accounts receivable and accounts payable, which include GST.

The net GST paid to, or received from, Inland Revenue, including the GST relating to investing and financing activities, is classified as an operating cash flow in the Prospective Statement of Cash Flows.

### Foreign currency transactions

Transactions in foreign currencies, including those for which forward foreign exchange contracts are held, are translated to New Zealand dollars (the functional currency) at the spot rate on the date of transaction.

Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the Prospective Statement of Comprehensive Revenue and Expense.

### Income tax

As a public entity under Section CW 38(2) of the Income Tax Act 2007, the company is exempt from income tax. Accordingly, no provision has been made for income tax.

### Statement of Cash Flows

The Prospective Statement of Cash Flows is prepared exclusive of GST, which is consistent with the method used in the Statement of Comprehensive Revenue and Expense.

Definitions of the terms used in the Prospective Statement of Cash Flows are:

'Cash' includes coins and notes, demand deposits and other highly liquid investments readily convertible into cash used by REANNZ as part of its day-to-day cash management.

'Investing activities' are those activities relating to the acquisition and disposal of long-term assets and other investments not included in cash equivalents.

'Operating activities' include all transactions and other events that are not investing activities.

### Revenue

The specific accounting policies for significant revenue items are explained below.

#### Grant revenue

REANNZ is funded in part by the Crown from the Strategic Science Investment Fund (SSIF). The SSIF grant is provided to partially fund the delivery of specialist

services and activities to meet the Government's goals for research and education. REANNZ must undertake an agreed work plan (Platform Plan) and the grant is recognised as revenue when paid because there are no other conditions attached.

Other grants are recognised as revenue when they become receivable unless there is an obligation in substance to return the funds if conditions of the grant are not met. If there is such an obligation, the grants are initially recorded as deferred revenue in the Prospective Statement of Financial Position, and recognised as revenue when conditions of the grant are satisfied.

#### Network and other revenue

Revenue is measured at the fair value of the consideration received or receivable. All transactions are exchange transactions.

#### Receivables and debtors

Accounts receivable are recorded at the amount due less an allowance for credit losses. REANNZ applies the simplified credit loss model of recognising lifetime expected credit losses for receivables.

In measuring expected credit losses, receivables have been assessed on an entity-type basis as this determines shared credit risk characteristics.

Receivables are expensed in the Prospective Statement of Comprehensive Revenue and Expense when there is no reasonable expectation of recovery. Indicators that there is no reasonable expectation of recovery include the debtor being in liquidation.

#### Investments - Bank term deposits

Investments in bank term deposits are initially measured at the amount invested. Interest is subsequently accrued and added to the investment balance. A loss allowance for expected credit losses is recognised if the estimated loss allowance is not trivial.

#### Derivative financial instruments

REANNZ enters into derivative financial instruments, including forward foreign exchange contracts, as part of its normal operations to manage its exposure to foreign exchange rate risk. REANNZ does not hold or issue derivatives for trading purposes. REANNZ has not adopted hedge accounting.

Derivatives are initially recognised at the fair value on the date a derivative contract is entered into and are subsequently revalued at each balance date, with the resulting gain or loss recognised in the Prospective Statement of Comprehensive Revenue and Expense.

A forward foreign exchange derivative is classified as current if the contract is due for settlement within 12

months of balance date. Otherwise the full fair value of forward foreign exchange derivatives are classified as non-current.

### Property, plant and equipment

Property, plant and equipment assets fall into six classes, which are measured, at cost less accumulated depreciation and impairment losses, as follows:

- Leasehold improvements
- Routers, switches and optical equipment
- Information technology equipment
- Office equipment
- PoP equipment
- Fibre and fibre housing.

### Additions

The cost of an item of property, plant and equipment is only recognised as an asset when it is probable that future economic benefits or service potential associated with the item will flow to REANNZ and the cost of the item can be measured reliably.

Work in progress is recognised at cost less impairment and is not depreciated.

In most instances, an item of property, plant and equipment is initially recognised at cost. Where an asset is acquired through a non-exchange transaction, the asset will be recorded at fair value at the date of acquisition.

Costs incurred subsequent to initial acquisition are capitalised only when it is probable that future economic benefits or service potential associated with the item will flow to REANNZ and the cost of the item can be measured reliably.

The costs of servicing property, plant and equipment are recognised in the Prospective Statement of Comprehensive Revenue and Expense as they are incurred.

### Disposals

Gains and losses on disposals are determined by comparing the proceeds of disposal with the carrying amount of the asset. Gains and losses on disposal are included in the Prospective Statement of Comprehensive Revenue and Expense.

### Depreciation

Depreciation on property, plant and equipment (excluding work in progress) is calculated on a straight-line basis, from the time the asset is in the location and condition necessary for its intended use. This basis

allocates the cost or value of the asset, less its residual value, over its estimated useful life.

The depreciation method, estimated useful lives and residual values of property, plant and equipment are reviewed annually to assess appropriateness.

The following estimated useful lives are used in the calculation of depreciation:

Leasehold improvements	6 years
Routers, switches and optical equipment	3–8 years
Information technology equipment	3 years
Office equipment	5 years
PoP equipment	8 years
Fibre and fibre housing	20 years

Leasehold improvements are depreciated on the basis of estimated useful life or the remaining lease term, whichever is shorter.

### Impairment of property, plant and equipment and intangible assets

REANNZ does not hold any cash-generating assets. Assets are considered cash-generating where their primary objective is to generate a commercial return.

### Non-cash generating assets

At each reporting date, assets are reviewed to determine whether there are any events or changes in circumstances that indicate that carrying amounts may not be recoverable. An impairment loss is recognised as the amount by which the asset's carrying amount exceeds its estimated recoverable amount.

If the carrying amount of an asset exceeds its recoverable amount, the asset is impaired and the carrying amount is written down to the recoverable amount. The impairment loss is then recognised as an expense in the Prospective Statement of Comprehensive Revenue and Expense.

Where an item of property, plant or equipment has been revalued, any impairment loss is recognised against the revaluation reserve for that class of asset. Where this results in a debit balance in the revaluation reserve, the balance is recognised in the Prospective Statement of Comprehensive Revenue and Expense.

Any reversal of an impairment loss is recognised in the Prospective Statement of Comprehensive Revenue and Expense. Impairment losses can only be reversed to the extent that the carrying amount of the asset matches the carrying amount as calculated under the cost less accumulated depreciation method.

For items of property, plant or equipment that have been revalued, any reversal of impairment loss is credited back to the revaluation reserve. However, to the extent that an impairment loss for that class of asset was previously recognised in the Prospective Statement of Comprehensive Revenue and Expense, a reversal of impairment loss is also recognised in the Prospective Statement of Comprehensive Revenue and Expense.

### Payables

Short-term payables are recorded at the amount payable.

### Employee entitlements

Employee benefits due to be settled within 12 months after the end of the year in which the employee provides the related service are measured based on the accrued entitlements at current rates of pay. These include salaries and wages accrued up to balance date, and annual leave earned but not yet taken at balance date.

A liability and an expense are recognised for bonuses where there is a contractual obligation or where there is a past practice that has created a constructive obligation and a reliable estimate of the obligation can be made.

### Provisions

Provisions are recognised for future expenditure of an uncertain amount or timing when:

- there is a present obligation (either legal or constructive) as a result of a past event,
- it is probable that an outflow of future economic benefits or service potential will be required to settle the obligation; and a reliable estimate of the obligation amount can be made.

### Commitments and contingencies

A schedule of commitments and contingencies is not separately disclosed in these Prospective Financial Statements.

### Operating leases

An operating lease is a lease that does not transfer substantially all the risks and rewards incidental to ownership of an asset to the lessee. Lease payments under an operating lease are recognised as an expense on a straight-line basis over the lease term.

Lease incentives received are recognised in the Prospective Statement of Comprehensive Revenue and Expense as a reduction of rental expense over the lease term.

Where the leased items are not in use, the operating lease payments will be treated as a prepayment in the Prospective Statement of Financial Position. Once the items

begin to be used in deriving revenue, these prepayments are released to the Statement of Comprehensive Revenue and Expense on a straight-line basis over the period of the remaining operating lease term.

### Finance leases

A finance lease is a lease that transfers to the lessee substantially all the risks and rewards incidental to ownership of an asset, whether or not title is eventually transferred.

At the commencement of the lease term, prepaid finance leases where REANNZ is the lessee are recognised as an asset in the Prospective Statement of Financial Position at the fair value of the leased item.

The amount recognised as an asset is depreciated over its useful life. If there is no reasonable certainty as to whether REANNZ will obtain ownership at the end of the lease term, the asset is fully depreciated over the shorter of the lease term and its useful life.

Indefeasible Rights of Use (IRUs) have been granted to REANNZ over specific fibre pairs and have been accounted for as finance leases as the risks and rewards of ownership have transferred to REANNZ.

REANNZ