



REANNZ

## Our Vision

WE ARE INDISPENSABLE  
TO NEW ZEALAND'S  
INTERNATIONALLY  
COMPETITIVE RESEARCH  
AND EDUCATION SECTOR.

## Our Mission

TO ENABLE NEW ZEALAND'S  
RESEARCH AND EDUCATION  
SECTOR TO THRIVE IN  
A DATA-INTENSIVE AND  
DIGITALLY-ENHANCED WORLD  
THROUGH THE PROVISION  
OF HIGH-PERFORMANCE  
NETWORK SERVICES AND  
CUSTOMISED SOLUTIONS.

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This year REANNZ celebrates its 10th anniversary, and reflecting on what we and our members have achieved together is enormously satisfying. But what excites us most is the prospect of the future.

# WE'RE IMAGINING THE FUTURE / WE ASK YOU TO JOIN US /

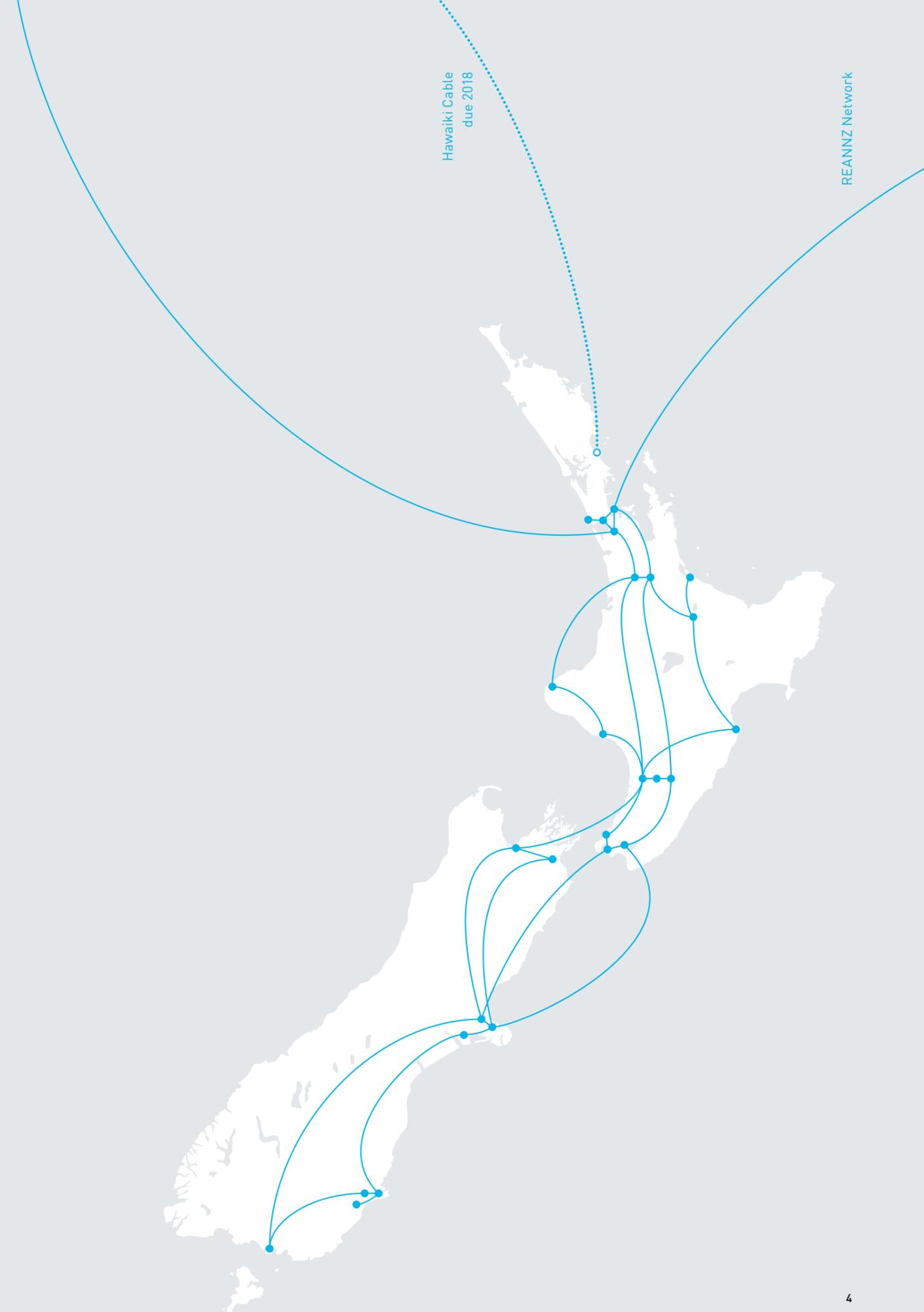
REANNZ is New Zealand's Crown-owned, high-performance network solutions provider. We own and operate a specialised research and education network on behalf of New Zealand's research and education communities.

Our users send and receive large data-sets across the globe. They access time-sensitive data. They collaborate with researchers in different countries, working at different institutions. They need a network that is carefully monitored and managed for performance — from the data source to its destination. That's what we focus on.

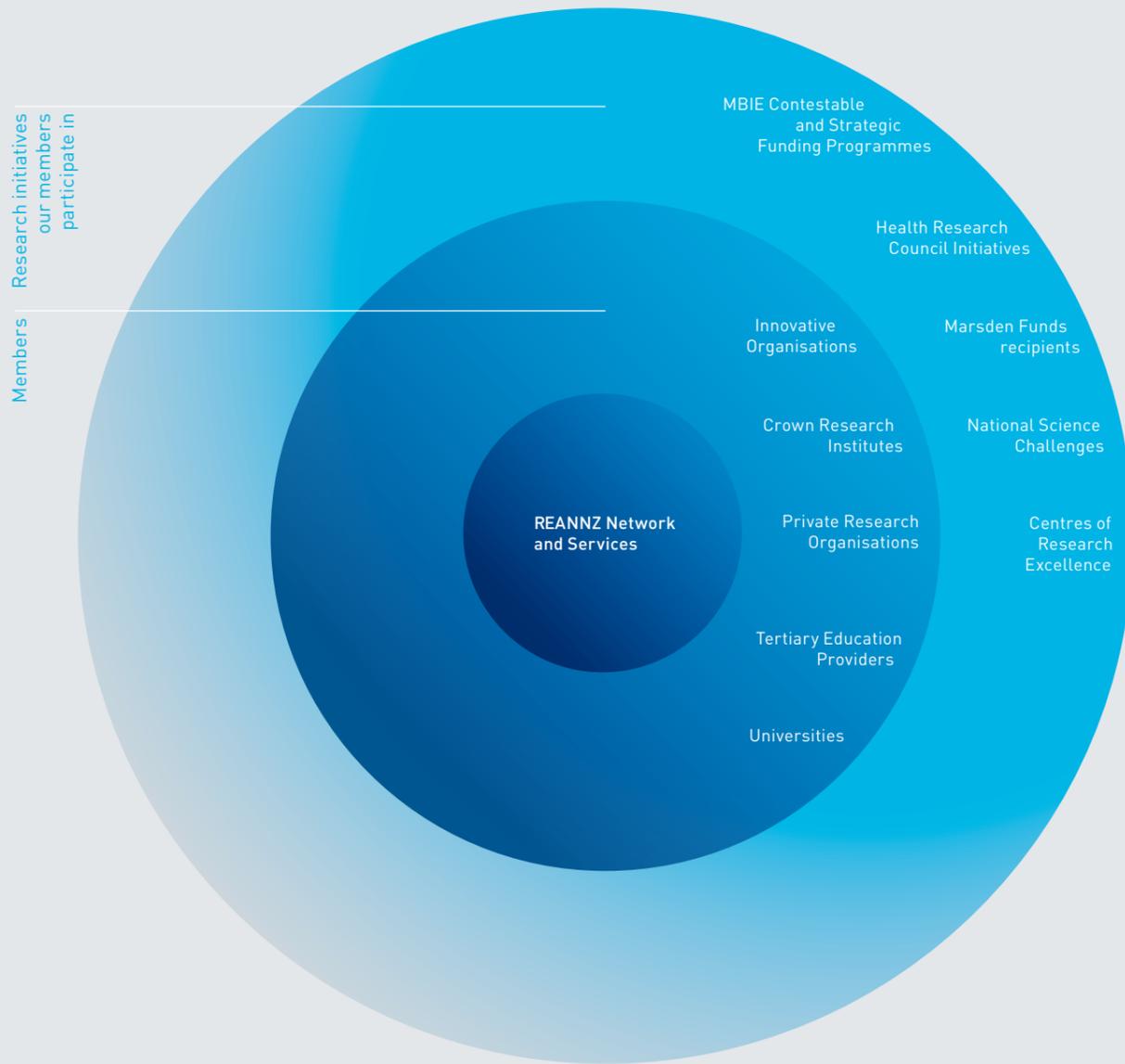
It's also why we're part of a global network of research and education infrastructure, supporting the world-wide exchange of data between researchers, educators and innovators; connecting them at speed to the tools, people, applications and resources they need to be successful in their fields, wherever they may be.

When our people have access to the infrastructure required to pursue and achieve excellence, it creates a ripple effect, attracting more resources, more talent, greater international collaboration and new breakthroughs. This positive cycle delivers benefits for all New Zealanders through improved social, economic, environmental and educational outcomes.

A research and education network is essential to the success of a nation. High-performance connectivity is a prerequisite in a world where success requires access to resources on a global scale. New Zealanders need not be constrained by their physical location on the planet. We have the local and global infrastructure in place, we now need to encourage New Zealand to realise its ambitions, and take advantage.



## OUR MEMBERSHIP



REANNZ exists to serve the needs of research, education and innovation. Our membership consists of New Zealand's Universities, Crown Research Institutes, Tertiary Education Providers (both public and private) as well as other private research organisations and innovative organisations involved in research or its commercialisation. By supporting these organisations, our impact extends to the collaborative research initiatives in which they participate. These include the National Science Challenges, Centres of Research Excellence and collaborations by recipients of Marsden Funds, Health Research Council grants and MBIE strategic and contestable funding.

# A SEAT AT THE TABLE



Research and education transcends both institutions and geographic borders — and that's where research and education networks truly come into their own.

REANNZ is more than just a national network, we are part of a global infrastructure of over 100 research and education networks delivering data from Iceland to Antarctica.



At REANNZ we work with National Research and Education Networks all over the world, from AARNet in Australia to GÉANT in Europe and Internet2 in the US. The one thing we all have in common is that we build our networks to manage the most demanding, data intensive work. That means people all over the world can work together to build our future.

REANNZ is part of the Global R&E Network CEO Forum, a group of executive leaders from a range of leading national and regional research and education networks from around the world. The goal of the CEO Forum is to stimulate and accelerate global implementation and adoption of new network solutions and services to create additional value for the global research and education community.

The CEO Forum consists of the Chief Executive Officers of AARNet (Australia), CANARIE (Canada), CERNET (China), CUDI (Mexico), DANTE (Europe), DFN (Germany), Internet2 (USA), Janet (UK), NORDUnet (European Nordics), REANNZ (New Zealand), RedCLARA (Latin America), RENATER (France), RNP (Brazil), SANReN (South Africa), SINET (Japan), SURFnet (The Netherlands) and the UbuntuNet Alliance (Southern and Eastern Africa). They meet twice a year in person and regularly by video conference.

Being part of the CEO Forum is just one way in which REANNZ connects with its international partners. Another is by contributing to the In The Field blog ([inthefieldstories.com](http://inthefieldstories.com)) which posts stories from around the world showcasing the work enabled by research and education networks.

Research and education network infrastructure stretches across the globe, but these networks are much more than fibre, routers and switches. They connect people, data and applications, they foster collaboration and cultivate interdisciplinary communities striving to make a difference to the world.

“GLOBAL RESEARCH AND EDUCATION NETWORKS ARE MELTING BORDERS AND BOUNDARIES TO ENABLE RESEARCH, COLLABORATION AND INNOVATION, ANYTIME.”

Jim Ghabbane  
Chief Executive  
CANARIE, Canada's research  
and education network

“RESEARCH AND EDUCATION NETWORKING WILL INCREASINGLY ENABLE AND ACCELERATE SCIENCE, EDUCATION AND INNOVATION... THEREBY MOVING US FORWARD TOWARDS A FUTURE OF UNCONSTRAINED KNOWLEDGE TRANSFER AND COLLABORATION.”

Leon Staphorst  
Competency Area Manager  
SANReN, South Africa's research  
and education network

“WE RECOGNISE THE IMPORTANCE OF DEVELOPMENT, INTERCONNECTION AND UTILISATION OF NATIONAL RESEARCH AND EDUCATION NETWORKS AS PROVIDING AN OPEN INFRASTRUCTURE FOR EDUCATION, RESEARCH AND DEVELOPMENT PURPOSES THAT ALSO SERVE TO ENHANCE CONNECTIVITY AROUND THE WORLD.”

Joint Declaration from the G7 ICT Ministers' meeting,  
bringing together ICT Ministers representing the  
G7 countries of USA, UK, Japan, France, Italy, Canada  
and Germany, plus the European Union.

# CELEBRATING 10 YEARS OF SERVICE

In 2006, following the realisation that the lack of a specialised high performance telecommunications network was limiting New Zealand's ability to participate fully in the global research and education arena, this country established what was then called the KAREN network, operated by a new Crown entity, Research and Education Advanced Network New Zealand Limited. It was a major investment for our government and our research and academic institutions.

Over the last 10 years, the network has significantly developed in reach, capacity, performance, reliability and services to become one of the best small-country research and education networks in the world, supporting this country's most innovative research and academic institutions to connect nationally and internationally.

The prime users of the REANNZ network are our researchers, innovators, educators and students. The beneficiaries of the REANNZ network are all of us. Whether in education, health, commerce or government, the access that REANNZ users have to the networks, data and knowledge of the world has materially changed our lives for the better. Not only that, but as a major buyer of high performance national and international telecommunications links, REANNZ has helped foster a more competitive telecommunications market for the benefit of all New Zealand.

I thank all of our stakeholders for their support over the last 10 years, those who had the vision to establish REANNZ, those who had the expertise and the passion to build, operate and develop the network which delivers world class connectivity to New Zealand's research and education communities and, most importantly, our members who have given us the privilege to serve them.



## Exceeding expectations

During the last year, we have seen the performance and capacity of the network continue to develop, together with an enthusiastic uptake of new added value services by our members. REANNZ has also delivered strong financial results for the financial year ending 30 June 2016. We experienced growth in top line performance and lower than budgeted costs, resulting in an operating surplus of \$4.26 million, excluding unrealised foreign exchange movements. These surpluses are necessary for the organisation to meet its future investment needs in national and international connectivity, and are within our forecast parameters for managing USD exchange rate risk.

## A sustainable model for the future

Rather than buying mainstream commercial services, most developed and developing countries (as well as data-intensive companies like Google, Amazon and Microsoft) have built dedicated, specialised, high-performance, national and institutional infrastructure, programmes and human resources to support data-intensive research, education and innovation. Substantial national and international benefits are sought, both economic and societal. New Zealand was late to the party, but REANNZ has created the environment that is allowing us to catch up. Today we not only deliver a very high-performing network to New Zealand's research and education community, but also we facilitate and manage the complex system of access, identity, connectivity, transfer and inter-institutional links within New Zealand and around the world.

The NZ Government has espoused both a desire for New Zealand to achieve greater capability in data-intensive education, research, healthcare and social services, and a desire for greater international connectivity in research and education. At the same time, the Government has signalled that it wants to stop its partial funding of our services, with the full cost borne by our members. If our members do not make up the cost difference, some key network and system management capabilities may be lost, just as New Zealand's data-intensive research and education usage is set to rapidly expand. Tough choices will need to be made.

However, the Government's decision is also an exciting opportunity to reinvent our business model, including the market restraints under which we operate. We have a superb network, talented people, a valued reputation and promising new service lines, all of which provide us with a strong foundation. We are working with our owner and key stakeholders to develop and agree a new strategic, funding and pricing framework to enable REANNZ to serve New Zealand well for another 10 years and beyond.

## In conclusion

On behalf of my co-Directors, I thank our talented and committed staff for again delivering an excellent year of achievement. In particular, I want to thank our new CEO Nicole Ferguson for the leadership, vision and energy she has brought to the organisation, building on the solid platform she took over. I also thank my colleagues on the Board for their commitment, insight, counsel and support.

In 10 short years we have built and proven the value of the REANNZ network. But we can't stand still. We look forward to agreeing a new sustainable basis for the next phase of our development, so that we can support New Zealand's place in a data-intensive world, working with our members to help unleash this country's full potential in the hugely exciting world of our technology-enabled tomorrow.



**Jim Donovan**  
Chair of Directors

# OUR BOARD /

### Jim Donovan Chair

Jim is a professional Director with wide experience in the public and private sectors, including technology-based businesses and tertiary education. In addition to REANNZ, he is chair of the charity Skylight Trust and his family company Isambard. He is a Chartered Fellow of the Institute of Directors.



### Ross Peat Deputy Chair

Ross is Executive Director and co-owner of health technology companies HealthSoft New Zealand Ltd and HealthSoft Australia Ltd, and a Director of AUT Enterprises Ltd. He is a Founding Investor of the Tuhua Fund (angel and early stage investment), a member of the Ice Angels and sits on the Ice Angels Deal Flow Committee.



**Professor Simon Hall**

Simon is Head of the Institute of Fundamental Sciences and Deputy Pro Vice-Chancellor for the College of Sciences at Massey University. He is a Professor of Electrochemistry at the university and two companies have been spun out based on his research on rechargeable batteries.



**Susie Johnstone**

Susie is based in Balclutha where she is the Managing Partner of Shand Thomson. Susie is a Fellow of both Chartered Accountants Australia & New Zealand and the Institute of Directors, and is the Independent Chair of the Audit and Risk Committee of the Dunedin City Council and the Southern District Health Board.



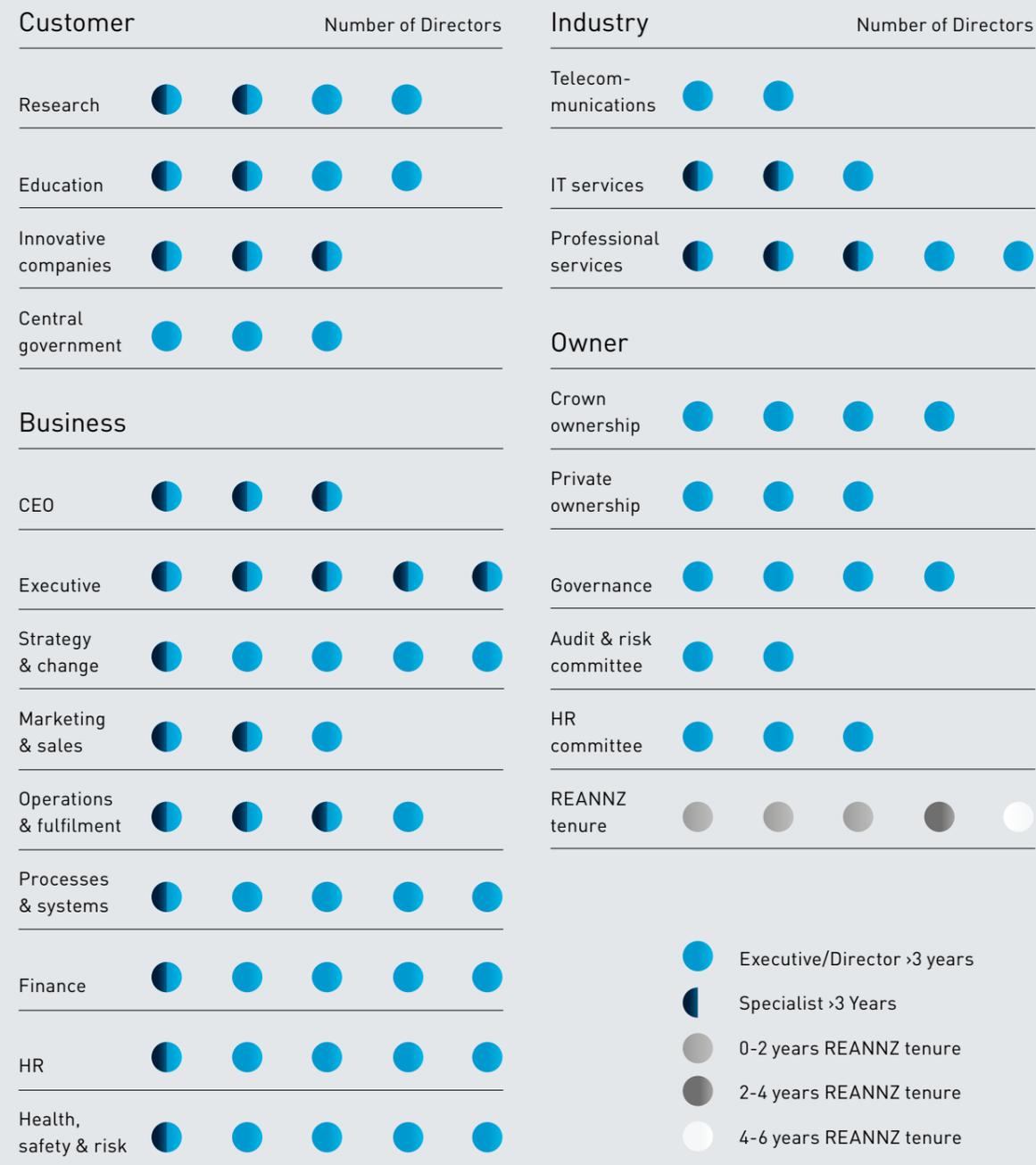
**Professor Steve Weaver**

Steve is Emeritus Professor at the University of Canterbury where he was formerly Deputy Vice-Chancellor (Research). He serves on the Board of GNS Science Ltd, is a member of the Governance Group of the Resilience National Science Challenge and is a Fellow of the Royal Society of New Zealand.



## BOARD SKILLS AND EXPERIENCE

The following chart gives a snapshot of the relevant skills and experience of the REANNZ Board as at 30 June 2016 (self-assessed by each Director). The chart shows the number of Directors with three or more years' experience as a practising specialist in the skill area, and the number who have three or more years' significant experience with the topic as an executive or Director.



# A SUSTAINABLE MODEL FOR THE FUTURE

REANNZ owns and operates infrastructure to deliver its high-performance network services. As with most infrastructure-based businesses, REANNZ operates on medium-to-long-term infrastructure investment cycles.

To support the periodic investment in this infrastructure, REANNZ's business model requires the accumulation of cash reserves. Major network reinvestment points include:

- > the shift to a new international cable provider, which is forecast to be ready for service in the 2018/19 financial year. This includes assumptions about maximum international capacity demand and the cost of appropriate resiliency options; and
- > the renewal of national network infrastructure which will be required in 2022/23, as the useful life of existing infrastructure and the associated operating agreements expire. Assumptions about the scale and cost of the replacement have been made, and given the dynamic nature of the telecommunications market actual requirements may vary significantly from the estimates shown.

The following graph shows REANNZ projected cash balances over the coming 10 year period under different funding scenarios.

The grey line shows the cash balance as forecast in the financial statements presented in our 2016/17 Statement of Performance Expectations approved by the Board on 31 May 2016. It assumes no sustainable business model has been agreed, and shows the significant impact that a failure to resolve this issue would have. It includes cashflows from both the advanced network and additional services.

The impact of not having an agreed sustainability model past 2017 is shown in the operating surplus / (deficit) before foreign exchange gains and losses table to the right.

	2015 Actual \$000	2016 Actual \$000	2017 Projected \$000	2018 Projected \$000	2019 Projected \$000
Operating Surplus / (Deficit) excluding foreign currency gains and losses	4,068	4,262	4,833	(4,593)	(5,734)

As part of our sustainability goal for 2016/17 we are seeking to stabilise REANNZ's financial position by securing "\$4M p.a. in additional revenues" (shown by the blue line). The exact nature and sources of these revenues has not yet been determined, and this forms a key part of the work to be undertaken over the upcoming year.

As shown by the blue line, \$4M should leave REANNZ in a sustainable position, with the ability to manage network reinvestment in 2022/23, and start accumulating reserves for the next investment cycle.

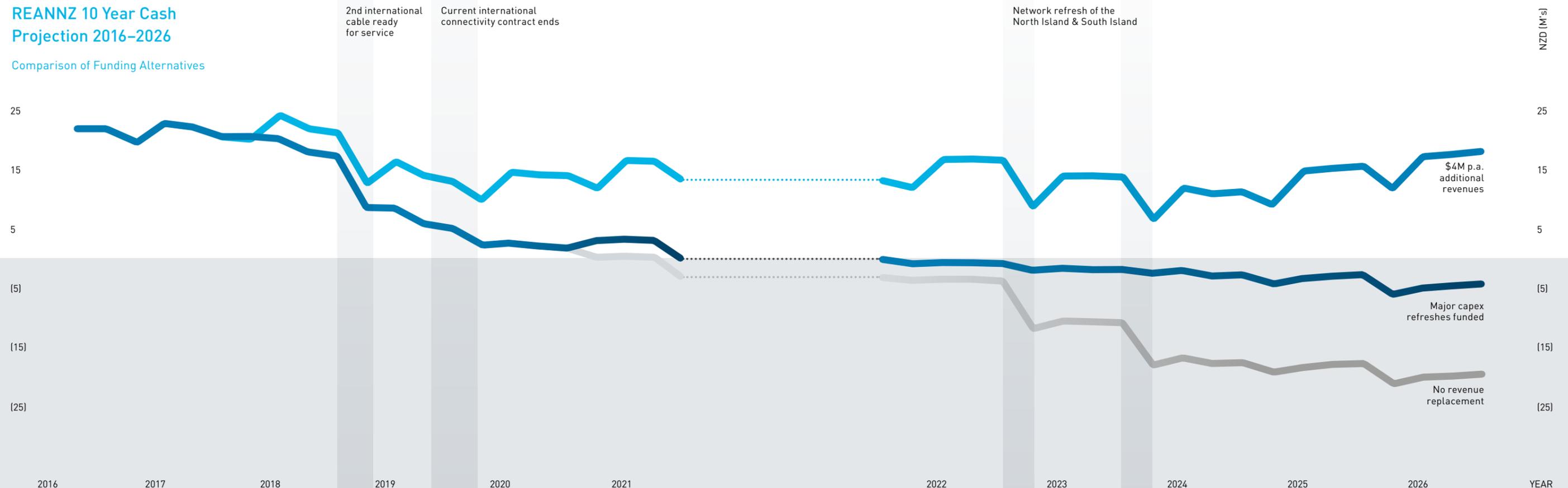
REANNZ aims to have a minimum cash balance of \$5M, enough to cover roughly three months of operating expenses, and manage ongoing foreign exchange and membership risk.

We have also modelled an alternative scenario, where no annual funding is received, but instead the cost of the national network infrastructure renewal is funded through one-off capital or other funding injections (the dark blue line). Under this scenario, REANNZ would still need to either make some adjustments or quality trade-offs in its service offering (which may not be desirable if we wish to continue to achieve our performance targets and outcomes), or find some other ongoing revenue stream to remain cash positive.

It is clear from the models presented below that failing to replace annual revenues or a capex injection for the national network reinvestment on its own are not viable options. REANNZ is currently working with stakeholders to identify a revised business model that delivers the necessary financial performance, including timing of cashflows to support infrastructure investment, for REANNZ to operate sustainably.

## REANNZ 10 Year Cash Projection 2016–2026

Comparison of Funding Alternatives



# WHIRIA TE TANGATA / WEAVE THE PEOPLE TOGETHER



Connectivity is the path to discovery. As REANNZ celebrates its 10th birthday, I am incredibly proud to lead an organisation that is enabling transformational change for New Zealand's research, education and innovation communities.

Ten years ago, visionaries recognised that growing a knowledge economy was dependent on our researchers, scientists and students having access to high-performance connectivity that would allow them to both collaborate and compete on a global playing field.

At the time, many thought New Zealand couldn't possibly need the capabilities being talked about.

Ten years later, the speeds being used are already at least 150 times what was contemplated when the network first went live.

Our membership has grown from 16 Universities and Crown Research Institutes, to over 45 members including ITPs, private research and innovative organisations and charities. These organisations contribute to national programmes, such as Centres of Research Excellence and National Science Challenges, and include Marsden Fund recipients and New Zealand's future pioneers, our students.

To keep New Zealand at the forefront of discovery, whether that be in the lab, the lecture hall or out in the field, we mustn't rest on our laurels.



The nature of data and the way it moves is changing. More of our members are considering off-premise solutions for both enterprise and research data, elevating the need for reliable and high-capacity networks. Sensor technologies and the Internet of Things continue to add to the need for distributed networks able to deliver time-sensitive data, from collection and storage to processing and analytics. The way our users engage with their data is also changing — processing and manipulating is increasingly done remotely and the use of global or distributed tools, applications and instruments is growing.

The provision of managed, end-to-end network support as well as data-centre and cloud service access is crucial as we work toward our mission to enable New Zealand's research and education sectors to thrive in a data intensive and digitally enhanced world. Our neutral national role in access to these services means our members have the ability to make the choices that are best for them.

## We are delivering world class National Research and Education Network services.

In the last year, as planned, we have doubled capacity on major national network links (at negligible cost), to meet member demand for bandwidth. We have a strong operational record, having maintained the reliability of the network with over 99.99% availability during the year — critical as members are dependent on connectivity to undertake science and deliver their education programmes. And, for the second year in a row, 100% of the members we surveyed reported that we had solved any issues to their satisfaction in a timely manner. That's an exceptional service record, and one that our team is deservedly proud of.

## We are enabling innovation and encouraging collaboration across the network.

Data volumes sent and received over the network have grown by 52% over the last year. To put that in context, the data used by our research and education community has grown three times faster than that used by New Zealand as a whole, which increased by only 16%.

Big-data research and education is characterised by large, and often infrequent, bursts of traffic as someone sends a file to be analysed or processed. Encouragingly, the frequency of these traffic bursts has also grown over the last six months.

This is a result of the improvement in the internal networks of our members (see the University of Otago case study on page 23), which are unleashing some of the big-data potential of their researchers. We are excited about the step-change in capability across our membership that could be realised as other institutions focus on implementing these solutions for their users.

96% of the members we surveyed considered REANNZ to be essential or valuable to them in their work, emphasising the importance of our services and the global platform of which we are a part.

In the last year we have successfully integrated Tuakiri, New Zealand's Federated Identity service, into the REANNZ portfolio. Tuakiri enables students, academics and researchers to get secure and seamless access to their applications using one set of credentials granted by their home organisation.

The number of member sites that we now manage through our managed services programme has increased by 16 to 48 over the last year. Revenues from this service have grown 90% on the last financial year, diversifying our revenue base and more importantly allowing us to deliver a high-performance experience all the way to our members' front doors.

## Financially we are performing well.

After adjusting for the timing difference in the recognition of Crown Grant revenue related to the Hawaiki International Cable contract, we exceeded our net surplus target for the year. These surpluses are an essential part of the accumulation of reserves to support the necessary, periodic reinvestment in network infrastructure and services, including the 25 year commitment to the Hawaiki Cable we undertook on behalf of the research and education system in New Zealand. Saving for infrastructure reinvestment is a business model that is necessary due to our operating restrictions.

We are also focused on ensuring New Zealand's research and education community has access to the connectivity and services they need to be successful in the years ahead. Infrastructure is a long-term commitment and REANNZ currently serves a narrow and specialised group of users. The New Zealand Government has contributed financially to the specialised nature of the REANNZ network and the national system management role that REANNZ has played since our inception. This funding agreement expires at the end of the 2017 financial year, and it is essential for REANNZ, New Zealand's research, education and innovation community and government to agree the path to sustainability in the year ahead.

## The future is about unleashing the potential of New Zealand's research and education community.

As we enter the 2016/17 financial year we are focused on supporting this community to deliver a step-change in their ability to support and grow research and education in their institutions.

As members invest further in modern, on-campus infrastructure in support of their users, the ability to access and push our high-performance network will only increase.

Over the last 10 years REANNZ itself has grown from a bulk-procurer of bandwidth to a full-service networking organisation meeting the needs of innovation, research and academia, as well as teaching and learning. We will continue to partner with the community to deliver solutions that add value by:

- › leveraging the investment made in our high-performance network infrastructure;
- › developing customised services where there is a unique need and no solution available in the market;
- › procuring third party services where we can add value through aggregated pricing, better terms, interoperability or support;
- › creating communal resources that can leverage our economy of scale. We will work together with our members to identify and develop new services.

The REANNZ team come to work because they believe in the importance of what our users do. The incredible results that this organisation has achieved over the last 10 years are a testament to the quality of our people and the passion they have for our mission.

I have taken on this role with pride in our team and our work to date. We won't stop here. The future is beckoning, and we need to support the needs of today while preparing both REANNZ and New Zealand's research, education and innovation community for the future. Whatever that future holds, we know it will be driven by data.

Data drives modern economies. Those that convert that data into knowledge will thrive.



**Nicole Ferguson**  
Chief Executive

# 100%

of users say reported issues are resolved in a timely manner



of users believe the REANNZ network to be essential or valuable to their work

# GETTING UP TO

# SPEED



REANNZ provides a national data superhighway, built to carry large volumes of traffic around the country, and the world, at speed. However sometimes data transfers slow down before they get to the national network, so we're working with organisations to improve performance across the whole journey, from desk to destination.



# RESEARCH & SCIENCE

The REANNZ national data superhighway is ready and waiting to carry large volumes of traffic around the country and out to the rest of the world. However, sometimes we see that data transfers slow down before they get to us because they go through various checks or gates such as firewalls, packetshapers or traffic inspectors.

These gates are really important for most internet traffic, which can include personal information that we want to protect. All of the data needs to be checked carefully — like when your bags are scanned at the airport so they can check everything you have packed. Research and education traffic is different; it often includes large datasets that users want to move quickly, so that they can get on with their work. It's not that it doesn't need any security, just not the same type of security, like working in an office building with a concierge — they've seen you before and they know who you are, so they let you in.

For this reason ESnet, the Energy Sciences Network based in the US, created the Science DMZ. Here at REANNZ we think of them as the on-ramps to the superhighway. It's a different path, just for this particular class of traffic, to get data from the source — for instance, a researcher's desk — across buildings, campuses and countries to anywhere in the world without slowing down.

Recently, this on-ramp was installed at the University of Otago. They had been struggling to get data out of their front door any faster than a few hundred megabits per second. That meant that researchers sometimes resorted to using external hard drives and couriers to get their data around the country. The university had data storage clusters in place on each of its three main campuses, capable of handling several petabytes of data. With that infrastructure in place they wanted to enable secure, managed data transfers from this distributed storage platform across the globe, effectively removing distance as a constraint to research. Something had to change.

They read up on Science DMZs\* and approached REANNZ for help.

The University of Otago and REANNZ worked together to come up with the best solution for their needs. We installed a managed edge switch, so that everyday internet traffic would be directed down the normal path with all of the gates, while research data would go down a different, faster path, which bypassed all of the gates it didn't need to go through. The university now has a clear high-speed research data path to and

from the REANNZ network. On top of that, REANNZ manages the switch, so if changes or upgrades need to be made in the future REANNZ can make them, meaning less work for the university.

Once the managed switch was in and the Science DMZ established, the university collaborated with NeSI to design and deploy their data transfer solution and run benchmark tests.

After extensive tuning of the Science DMZ data transfer infrastructure, and having established secure connections from this infrastructure to the research storage clusters, the university found that it could now transfer research data at speeds up to 15 times faster than before.

"When we put the Science DMZ in and we started testing, we were really pleased with the way the national network ran. Given the right on-ramp, the power of the network became apparent, and we're going right up the country and out of the country and it works really well, consistently. We could never have tested that before."  
— Dave Maclaurin, Systems Services Manager, University of Otago.

There has been steady demand from researchers to use the Science DMZ data transfer service, with over 150 terabytes of data transferred to national and international research organisations, at speeds ranging from 2 to 5 gigabits per second.

Two big data research projects are now underway that have driven the university to adopt the REANNZ managed edge and Science DMZ — they knew that the infrastructure needed to be in place before the demand.

The first project relies on a complex high speed data pipeline that will transfer nearly half a petabyte of data over the lifetime of the project. Before the on-ramp was built, they weren't sure they would be able to get the data from the source to our network. So far this project has transferred over 100 terabytes of data from the US to Otago. The next phase of the project will see subsets of this data going to the NeSI High Performance Computing cluster in Auckland and then finally back to Otago.

The other project, just getting underway at the moment, will transfer large sets of data from a research instrument in Otago to a university lab in the US.

If you're interested in a Science DMZ for your organisation, or any of the other products and services that we offer, such as eduroam™, Tuakiri, managed switches and firewalls email [info@reannz.co.nz](mailto:info@reannz.co.nz)

\*For more information about Science DMZs, and faster data in general, we recommend [fasterdata.es.net](http://fasterdata.es.net)



"WE'RE A LONG WAY AWAY DOWN HERE, ONE OF THE MOST SOUTHERN PLACES IN THE WORLD. WE'RE A RESEARCH INTENSIVE ORGANISATION, WORKING IN ISOLATION TO AN EXTENT BECAUSE WE COULDN'T MOVE OUR DATA AROUND. I CAN SEE THAT NOW IT'S NOT GOING TO BE AN ISSUE."

Dave Maclaurin  
Systems Services Manager  
University of Otago

99.99%

national network availability

100%

international network availability

## GOOD EMPLOYER STATEMENT

### REANNZ as a good employer

Policies are in place to guide the organisation with what it means to be a good employer, and to ensure it provides equal employment opportunities.

Areas of focus for REANNZ are as follows:

#### Leadership, accountability and culture

REANNZ has a small and dynamic team, with fewer than 30 staff. Our culture is built upon our platinum rule: "treat others as they would like to be treated." We encourage all staff to lead by example, supporting others to behave in a way that is consistent with our culture and the values that we believe are crucial to our success. These values include putting the community first, integrity, responsiveness, taking action, personal responsibility and continual innovation.

#### Recruitment, selection and induction

All REANNZ positions are openly advertised. We encourage applications through a number of channels, some through a recruitment agency, and others through industry networks and recommendations. Prospective employees give a short presentation to REANNZ staff, allowing all staff to participate in the recruitment process and have a say in the appointment of their co-workers.

#### Employee development, promotion and exit

Being a small and diverse organisation there is opportunity for continual development and experience across multiple disciplines. External training and development is also encouraged and specific budget is set aside for courses and conferences to ensure staff remain current in their field.

#### Remuneration, recognition and conditions

We are committed to ensuring we attract, retain and motivate high-performing people. We continue to provide an environment that identifies, encourages and rewards excellence, innovation and high-quality services by using a remuneration structure that is competitive and fair. We offer flexible working hours by agreement, to ensure our staff have a work-life balance they are happy with.

### Harassment and bullying prevention

REANNZ has a published policy on harassment and bullying and has a zero tolerance approach. An employee assistance programme is available to all staff to enable them to get confidential support. Open communication between staff and the leadership team is supported and encouraged.

### Safe and healthy environment

Health and safety is taken seriously at REANNZ and procedures are in place to minimise risks, particularly when handling network equipment or when visiting our PoP locations. Staff wellbeing is high priority and REANNZ offers a flexible working environment where staff are able to manage their work responsibilities around other personal commitments.

## GOVERNANCE STATEMENT

### Organisational form

REANNZ is a Company under the Companies Act 1993, and is listed under schedule 4A of the Public Finance Act 1989. Its shareholders are the Minister of Finance and the Minister of Science and Innovation. At balance date, each shareholder held 908 shares on behalf of the New Zealand public.

REANNZ is not a Crown Entity listed under the Crown Entities Act. However, it is the intent of shareholders that REANNZ act in a manner consistent with the Crown Entities Act. REANNZ is subject to the Official Information Act.

### Role of the Board

REANNZ's Shareholding Ministers appoint a governing Board of Directors. The company's constitution sets the size of the Board at a minimum of two and a maximum of nine Directors. There were five Directors appointed for the year to 30 June 2016.

The Board is responsible under the company's constitution to manage, direct and supervise the company's business affairs. In practice, day-to-day management of the company is delegated to the Chief Executive.

The Board establishes the company's strategic and business plans, approves annual budgets and monitors management's performance against established goals. The Board also considers and approves new policies and business initiatives, authorises transactions outside

the prescribed delegated authorities of management and appoints the Chief Executive. Procedures are in place at Board, corporate and operational levels to safeguard the company's assets and its wider commercial interests.

A well-established regime of regular reporting is designed to maintain a high standard of internal communication and to ensure the Board remains appropriately informed of all aspects of the company's business and activities. Board fees are set by the Shareholding Ministers each year.

## Risk management

The Board is also responsible for ensuring that the company has effective policies in place to manage its risks. The Board decides the level and nature of the risks that are acceptable to the company. The Chief Executive is delegated responsibility for managing normal business risks. As part of managing its broader risk profile, the Board maintains and regularly reviews a risk register, and approves and reviews all company policies.

## Legislative compliance

The Board acknowledges its responsibility to ensure the organisation complies with all legislation. The Board has delegated responsibility to the Chief Executive for the development and operation of a programme to systematically identify compliance issues and ensure staff are aware of relevant legislative requirements.

## Board meetings

The Board of Directors generally meets monthly, and these meetings are supplemented with additional meetings as required for strategic planning purposes and to progress specific decisions. The Board met on nine scheduled occasions during the year and convened for seven special meetings (three Audit and Risk Committee meetings, three HR Committee meetings and one strategic planning meeting).

## Board committees

The Board has formally constituted an Audit and Risk Committee to focus on audit and risk management issues. Three members of the Board are on this committee, and the committee met three times during the year. The Board also has an HR Committee to advise on remuneration, performance and other employment related issues. Three Board members served on this committee and it met three times during the year.

## Board changes

There were no changes to the Board in the 2015/16 Financial Year.

## Interest procedures

The REANNZ Board has a documented conflict of interest policy that sets out procedures for identifying and addressing potential conflicts of interest. This policy applies to the Directors and staff of REANNZ.

The key determination when considering whether an interest might create a conflict is whether the interest creates an incentive for the Director or staff member to act in a way that may not be in the interests of REANNZ.

In deciding whether a conflict is present in any given situation it is appropriate that the determination be whether a reasonably informed objective observer would infer from the circumstances that the Board or staff member's judgement is likely to be influenced to the detriment of REANNZ's best interest.

An 'interests register' is maintained of Directors' interests and updated regularly.

## Auditor

Audit New Zealand, acting on behalf of the Controller and Auditor-General, is the auditor of REANNZ in accordance with section 32 of the Public Audit Act 2001.

## Registered office

Research and Education Advanced Network  
New Zealand Limited  
Level 5, QuallIT House  
22 The Terrace  
Wellington 6011

# PROTOTYPING FOR A CLEANER WORLD



Whatever the innovations and advances of the future are, we will not discover them by working alone. National networks like REANNZ have been built to allow researchers, scientists and educators to collaborate effectively, which is exactly what is happening in this project tasked with tackling air pollution in China.



Being able to transfer data around the world at high speed means that Kiwi researchers and educators can work with colleagues anywhere on the planet.

Two of our members, NIWA and Unitec, are working on a project with Wuhan University in China to solve environmental issues using their combined technologies and capabilities. Wuhan, an industrial city of 15 million people on the Yangtze River, suffers from very high levels of air pollution, and when they wanted to do something about this, they looked to New Zealand.

“New Zealand sets a great example for a very clean country. It is seen overseas, especially in China, as a country that has managed its environment very well.”  
— Dr Hossein Sarrafzadeh, Head of Computing, Unitec Institute of Technology.

So who is doing what?

- > NIWA brings high-end environmental science and monitoring capability;
- > Unitec is keen to develop a range of capabilities with Big Data and the Internet of Things (IoT);
- > Wuhan University and local commercial software company LJDY will provide a range of Geographic Information System (GIS) mapping and visualisation software; and
- > REANNZ will facilitate the networking and data transfer capabilities between the parties using the NZ and Chinese R&E networks.

Working together, these institutions will be focusing on important issues that could have a real impact in Wuhan, and potentially cities all over the world.

They will be using tools such as low cost, widely distributed devices equipped with environmental sensors. These are built into buildings, phones, cars, electricity networks, even personal wearable devices, delivering huge amounts of data about the world around us. They will also use small autonomous vehicles, such as drones for both the air and water with cameras and sensors to build a picture of a city.

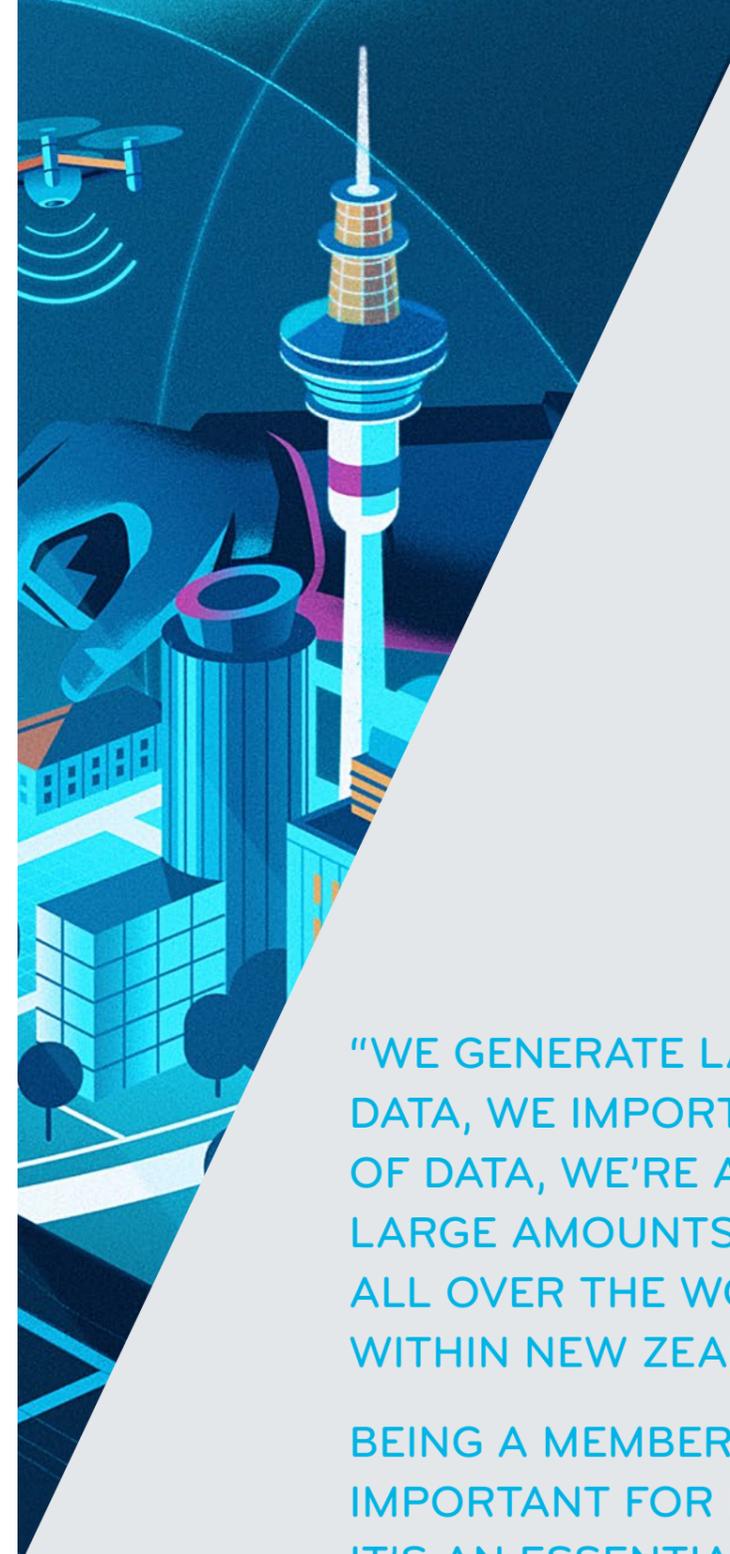
LJDY will create a new 3D modelling programme allowing researchers and academics to see entire cities in 3D, both over and under the ground, creating real-time visualisations of environmental data.

“I think most people are familiar with things like Google Earth. This system takes it to a whole new level. It’s not just a representation of the city, it’s actually a more detailed, literal model of the city. When you attach that to an Internet of Things sensor network you’re able to start pulling information about what’s happening with freshwater flows, with sewage flows, what’s happening with traffic flows.” — Andrew Watkins, General Manager Information Technology, NIWA.

The 3D mapping of a city full of sensors will be trialled in Auckland, which was selected because, with its relative remoteness, it is one of the few places in the world where you can investigate what happens with pollution without any interference.

Once the technology works successfully it can be deployed in Wuhan, and potentially any city in the world. This project could have huge economic benefits for New Zealand as technology is developed and shared, as well as huge environmental impacts for the whole world.

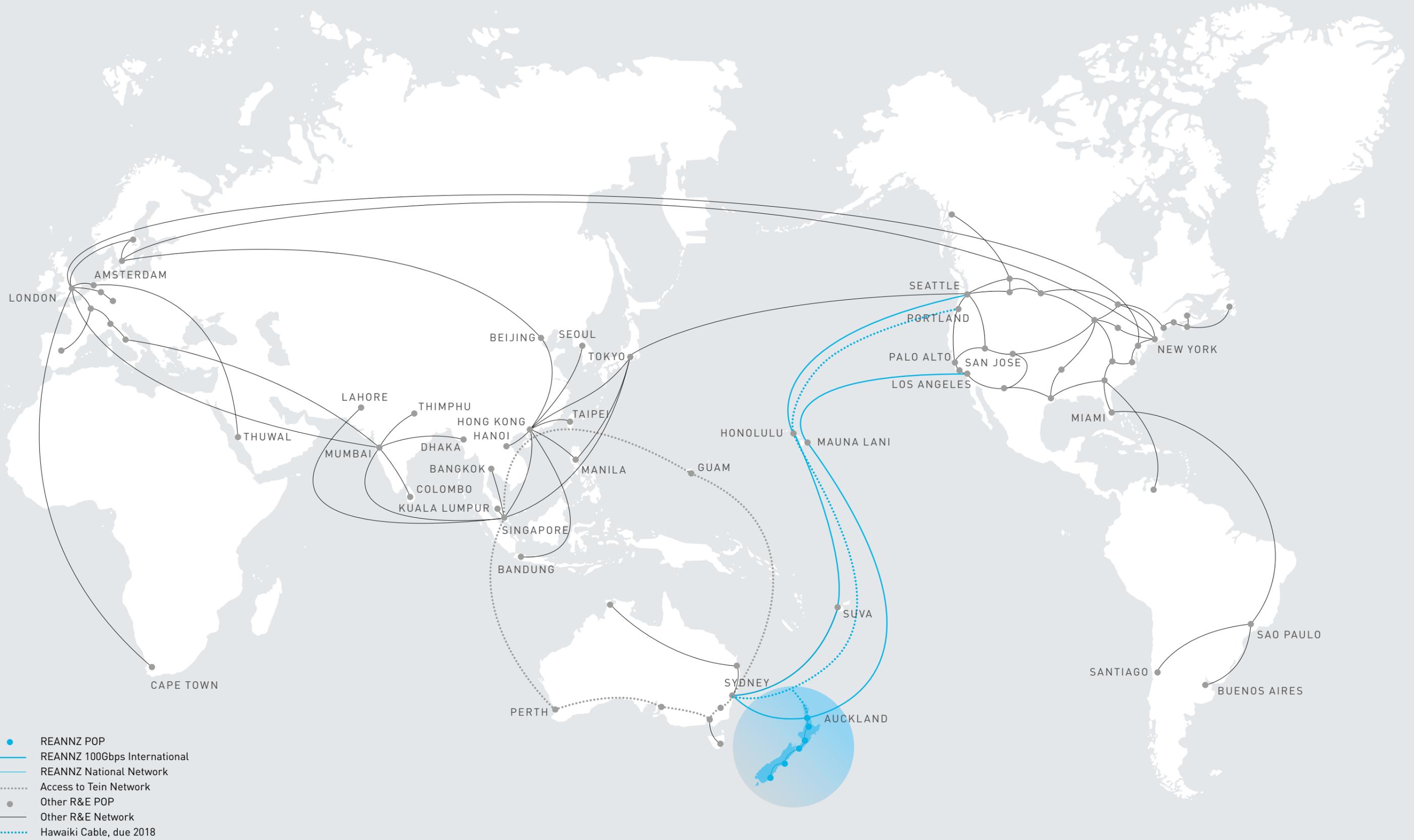
“Having a really high performing network connection between China and New Zealand is absolutely essential to this project. We’ve worked with REANNZ for many years now and we’ve always had them as part of our mix of network infrastructure support. It would be incredibly difficult to do a project like this without having that high-speed network capability between institutions that REANNZ has provided.” — Rick Ede, CEO, Unitec Institute of Technology.



“WE GENERATE LARGE AMOUNTS OF DATA, WE IMPORT LARGE AMOUNTS OF DATA, WE’RE ALWAYS SHIFTING LARGE AMOUNTS OF INFORMATION ALL OVER THE WORLD, NOT JUST WITHIN NEW ZEALAND.

BEING A MEMBER OF REANNZ IS IMPORTANT FOR NIWA BECAUSE IT’S AN ESSENTIAL PART OF HOW WE DO WHAT WE DO. WHAT WE CAN ACHIEVE BETWEEN US IS MUCH GREATER THAN WHAT WE COULD ALL ACHIEVE INDIVIDUALLY.”

Guy Coulson  
Air Quality Scientist and Manager  
Urban Air Quality and Health  
NIWA



THIS PERFORMANCE FRAMEWORK SHOWS HOW OUR OUTPUT, THE ADVANCED NETWORK AND RELATED TOOLS, ENABLE RESEARCH AND EDUCATION THAT LEAD TO A STRONG ECOSYSTEM AND GROWING ECONOMY.

## DELIVERS

The advanced research, education and innovation network and related tools

### Quality

National & International Network Availability

### Quantity

Volume of member connections; increased service offerings

### Timeliness

Issues resolved in a timely manner

### Cost-effectiveness

Membership base is retained



## ENABLES

Researchers across all fields will be able to conduct data-intensive research

Total traffic flows increase; and users consider the REANNZ network essential to their work

Collaboration between science, innovative business and education sectors is enhanced

Traffic volume through the international network increases; and traffic volume through the national network increases

Users have cost-effective access to the content and tools they need

Subscriptions to services increase



## EQUALS

Sector outcomes

Grow the New Zealand economy to deliver greater prosperity and opportunity for all New Zealanders

REANNZ outcomes

High-performing and globally competitive research, education and innovation ecosystem

## STATEMENT OF RESPONSIBILITY

The Board of REANNZ accept responsibility for the preparation of the annual financial statements and statement of performance, and for the judgements made in them.

The Board are responsible for any end-of-year performance information provided by REANNZ under section 19A of the Public Finance Act 1989.

The Board and management of REANNZ accept responsibility for establishing and maintaining a system of internal control designed to provide reasonable assurance as to the integrity and reliability of the financial reporting.

In the opinion of the Board, the financial statements and statement of performance fairly reflect the financial position and operations of REANNZ for the year ended 30 June 2016.

Signed on behalf of the Board:



Jim Donovan  
Board Chair

20 October 2016



Susie Johnstone  
Audit and Risk Committee Chair

20 October 2016

# STATEMENT OF SERVICE PERFORMANCE

For the year ending  
30 June 2016

Our suite of performance indicators attempt to measure the quality, quantity, timeliness and cost-effectiveness of our impact on New Zealand's high-performing and globally competitive research, education and innovation system.

## Outcomes

### One of many contributors

#### Quality

REANNZ is one of many contributors to New Zealand's high-performing and globally competitive research, education and innovation system. As with other research infrastructures, it is difficult to measure the direct impact our advanced network and services have on the country's innovation ecosystem. Therefore we use external, publicly available competitiveness rankings as a proxy.

Outcome	Trend Indicators	Results
High-performing and globally competitive research, education and innovation system.	New Zealand progresses its position in the top 500 universities per GDP, as shown in the OECD's 'Comparative performance of national science and innovation systems', OECD Science, Technology and Industry Outlook, published every two years.	New Zealand has a current ranking of 200 in the top 500 universities per GDP. The ranking was published on 12 November 2014. There was no change in ranking from the report published on 13 September 2012.
	New Zealand maintains its ranking for 'university-industry collaboration in R&D' in the World Economic Forum global competitiveness index.	New Zealand's ranking has improved from 17th place in 2014/15 to 16th place in 2015/16 for university-industry collaboration in R&D. The current ranking was published on 30 September 2015.
	An improvement in New Zealand's ranking for 'capacity for innovation' in the World Economic Forum global competitiveness index.	In 2014/15 New Zealand ranked 15th globally in innovation (published 3rd September 2014). There has been no change in ranking in 2015/16 in the latest report published 30 September 2015.

Improvements in a country's capacity for innovation and university-industry collaboration are clear indicators of its enhanced global competitiveness. New Zealand has maintained or improved its rankings over the last few years. As a key platform for cross-sector collaboration and facilitation of innovation, we are one enabler in the achievement of these results.

## Measuring our Impact

### Impact: Researchers across all fields are able to conduct data-intensive research

A significant number of New Zealand's science initiatives could not occur without the reach, reliability and speed of an advanced network. Whether users are generating, sharing and moving massive datasets for astronomy, climate science or genomics (to name a few examples), or needing access to data from sensors or applications in real-time, speed and precision transfer of data is critical. This is different from an ordinary business or home internet connection.

Measure	Result June 2015	Target June 2016 <sup>1</sup>	Result June 2016
Total traffic flows increase	+ 84% 18.17 PB	+ 28% 23.25 PB	+ 52% 27.54 PB

REANNZ continues to see very impressive traffic growth of 52% over the last year, indicating a significant increase in the use of network-based applications and amount of data-intensive science occurring within our research and education institutions. By comparison, New Zealand's data use grew by only 16%.<sup>2</sup>

REANNZ has been actively working with members to improve campus network performance, a key enabler of high-speed data transfer. This effort is beginning to bear fruit by enabling the community to better utilise the advanced network.

The sector-wide uptake of internet services — a pre-requisite for access to the donated international research capacity by Southern Cross — has contributed to the increase in traffic volumes. Domestically, REANNZ continues to focus on improving access to content through settlement-free peering, content caches, and increased use of services such as eduroam™, all of which increase the value our network brings to the community. In the last year we have also extended our reach to data-centres as our members' IT strategies change.

Measure	Result June 2014	Result June 2015	Target June 2016	Result June 2016
Users consider the REANNZ network essential to their work	69%	74%	> 80%	80%
Users consider the REANNZ network valuable to their work	25%	25%	Improvement on 2015	16%

In 2016, we saw our users' perceived value of the REANNZ network remain high at 96% considering the network 'essential' or 'valuable' to their work. This impressive outcome is the result of our relentless focus on delivering quality access to the content, applications and locations that our members need to reach.

1. The target for June 2016 in the 2015/16 Statement of Performance Expectations was based on an estimate of the June 2015 result. The target in the table above reflects the estimated percentage growth over the actual result for June 2015.

2. [http://www.cisco.com/c/m/en\\_us/solutions/service-provider/vni-forecast-highlights.html](http://www.cisco.com/c/m/en_us/solutions/service-provider/vni-forecast-highlights.html)

## Impact: Collaboration between science, innovative business and education sectors is enhanced

Collaboration takes many forms: it can be as simple as having a conversation over videoconference or as complex as the multistep process of turning one scientist's research project into a commercial product. REANNZ enables these collaborations by providing connectivity and the tools to make collaboration easier and more effective.

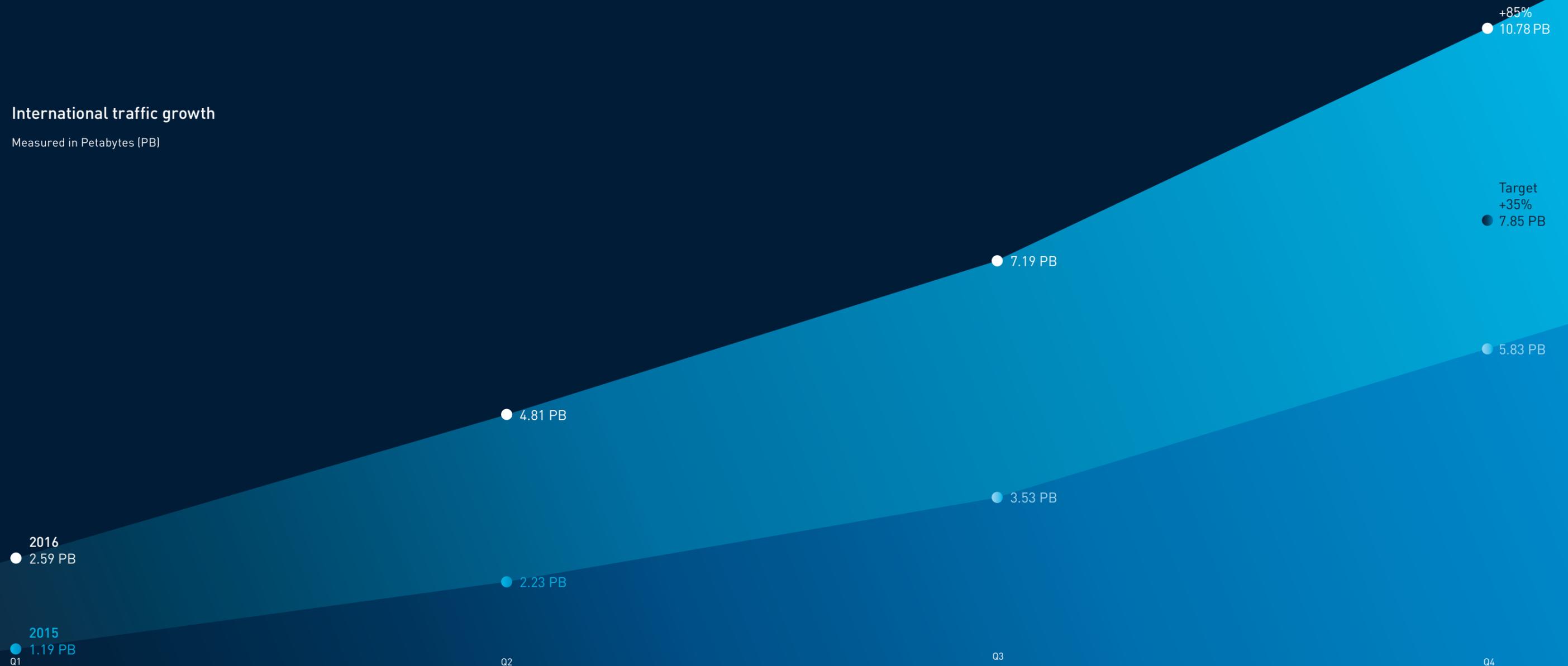
Increasing amounts of traffic flowing through our network indirectly indicate that more collaboration with both national and international participants is taking place.

Measure	Result June 2015	Target June 2016 <sup>3</sup>	Result June 2016
International traffic volume	+ 143% 5.83 PB	+ 35% 7.87 PB	+ 85% 10.78 PB
National traffic volume	+65% 12.34 PB	+25% 15.42 PB	+36% 16.76 PB

3. The target for June 2016 in the 2015/16 Statement of Performance Expectations was based on an estimate of the June 2015 result. The target in the table above reflects the estimated percentage growth over the actual result for June 2015.

## International traffic growth

Measured in Petabytes (PB)



National traffic growth has exceeded expectations and been driven by the increased use of REANNZ content caches and the addition of data-centre connectivity, which have allowed our members to host their data off-premise. General exchange of information has also increased.

## National traffic growth

Measured in Petabytes (PB)



Traffic to other research and education institutions overseas is not growing as aggressively, having increased only 7% over the prior year. However, in the last six months of this year traffic volumes were up 70% compared to the first half of 2014/15. This is a direct result of the improvement in campus infrastructure (see the case study on page 23), and is an encouraging sign for the potential of our researchers and their work.

### International traffic to other research and education institutions

Measured in Petabytes (PB)



## Impact: Users have cost-effective access to the content and tools they need

REANNZ plays a significant role in identifying, developing and managing access to services which improve the end-to-end networking experience for our end users, or fill a need which is unique to the research and education community. Examples of these services include eduroam™ (a global wi-fi roaming service between research and education organisations), Tuakiri (identity and access management) and network access management (focused on tuning for performance).

We also provide networking advice to help our members tune their own networks for research needs and speed, not just the traditional needs of the enterprise.

Members subscribing to REANNZ services are an indication of value for money.

Measure	Result June 2015	Target June 2016	Result June 2016
Subscriptions to services increase	+ 56%	+ 20%	+ 18%

Over the past two years, REANNZ has worked to bring new value-added services to the community. During the year REANNZ acquired Tuakiri Access Federation and we have seen continued excellent take up of our managed services. These are key services for enabling eResearch and access to critical research platforms. The target for the year of 20% growth was not quite achieved due to the timing of two contracts being signed in early July 2016.

## Measuring our output

### Output: Provide the REANNZ Network and support the member community

REANNZ benchmarks and monitors the performance of our network on the dimensions of quality, quantity, cost-effectiveness and timeliness.

#### Quality

The quality of our service can be measured by the availability of the network. Network downtime includes faults and other connectivity or hardware outages, but excludes planned maintenance outages. 99.90% network availability is standard for research and education networks internationally.

Measure	Result June 2014	Result June 2015	Target June 2016	Result June 2016
National network availability (12 month rolling average)	99.99%	99.99%	99.90%	99.99%
International network availability (12 month rolling average)	99.93%	100%	99.99%	100%

Network availability is crucial for our users to be able to perform their work when they need to. Network design is one way to maintain availability, even during outages, by the use of physically diverse paths, fail-over hardware and protected circuits. REANNZ's impressive 2016 network availability statistics (99.99% for the national network and 100% for the international network) are the result of our focus on operational excellence and designing for network resiliency.

#### Quantity

The number and size of our members' connections are a measure of the quantity of the services we provide.

Volume	Result June 2015	Target June 2016 <sup>4</sup>	Result June 2016
Network scale and reach (volume of member connections)	+ 45% 375 Gb	+ 25% 469 Gb	+ 73% 649 Gb

The volume of member connections is a combination of the number and capacity of those connections. Volumes have grown over the last year as new and existing members increased the size and quantity of their connections to the REANNZ network to meet user demand.

New Services Added	Result June 2015	Target June 2016	Result June 2016
Service offerings increase	Not achieved	Three new cloud service offerings available to members	Data Centre Connect services to members

REANNZ planned to launch three cloud service offerings during the year. As a result of member demand focus was instead put into a new data centre connection service, connecting members to commonly accessed data centres.

4. The target for June 2016 in the 2015/16 Statement of Performance Expectations was based on an estimate of the June 2015 result. The target in the table above reflects the estimated percentage growth over the actual result for June 2015.

### Cost-Effectiveness

In a fledging big data community, not yet mature in optimising the benefits of international data intensive collaboration, cost-effectiveness is critical. At REANNZ, it is best demonstrated by the retention of our core membership base, without which the opportunity for the science and innovation vision to be realised would be lost.

Memberships Maintained	Result June 2014	Result June 2015	Target June 2016	Result June 2016
REANNZ maintains its core membership base	8/8 Universities	8/8 Universities	8/8 Universities	8/8 Universities
	7/7 Crown Research Institutes			
	1/1 ATI	1/1 ATI	1/1 ATI	1/1 ATI
	11/18 Institutes of Technology and Polytechnics	12/18 Institutes of Technology and Polytechnics	11/18 Institutes of Technology and Polytechnics	12/15 Institutes of Technology and Polytechnics
	1/3 Wānanga	1/3 Wānanga	1/3 Wānanga	1/3 Wānanga

REANNZ is one of 117 research networks around the world. While it is difficult to directly compare costs with our international counterparts as they each operate within different geographical constraints and supply markets and are at different stages of maturity with regards to service offerings, we can provide an indicative comparison of REANNZ's budget to similar networks which are members of the European networking association, GÉANT.

budgets due to geography and supplier competition. REANNZ operates on a budget below the European average, despite New Zealand's high cost of international bandwidth.

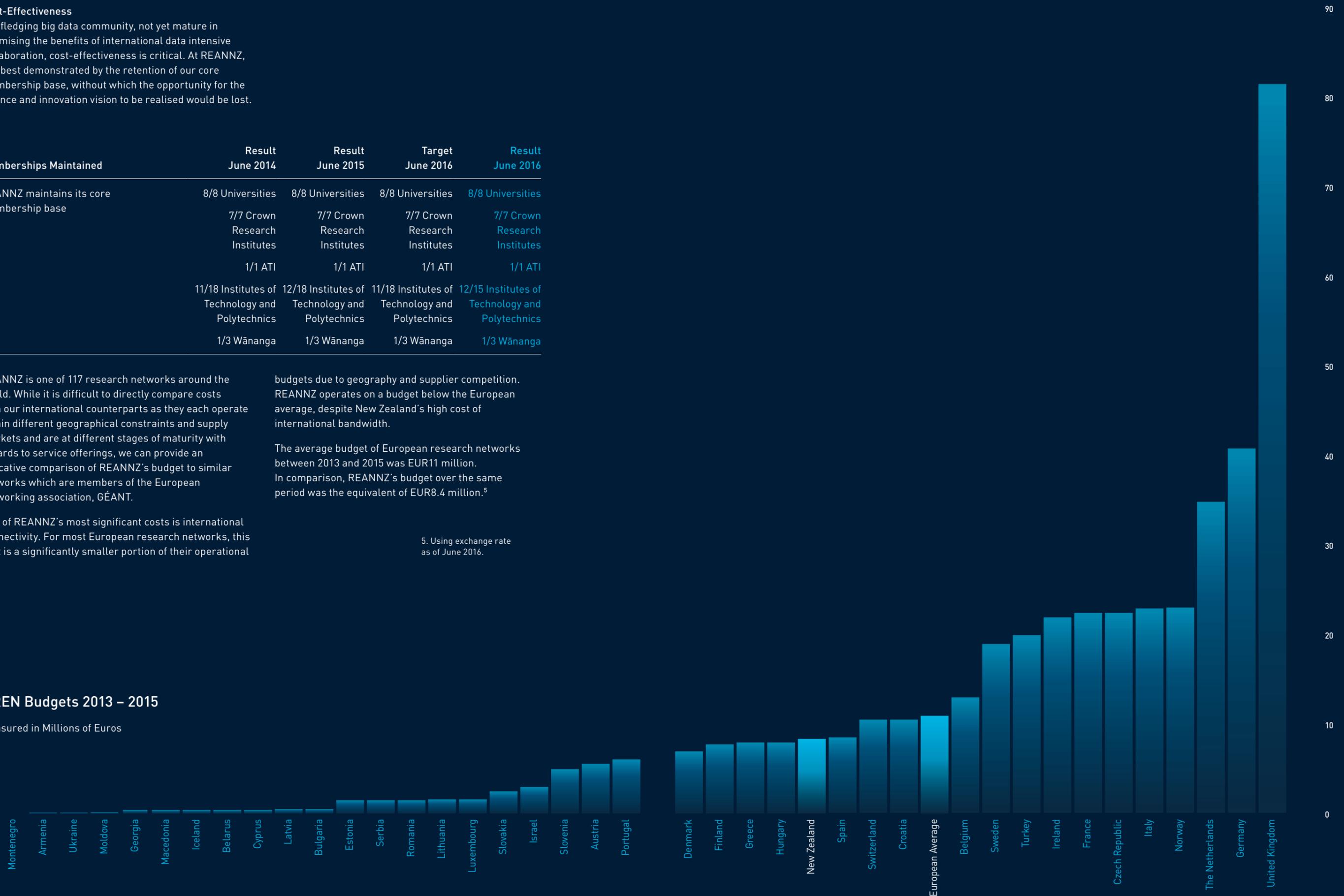
The average budget of European research networks between 2013 and 2015 was EUR11 million. In comparison, REANNZ's budget over the same period was the equivalent of EUR8.4 million.<sup>5</sup>

One of REANNZ's most significant costs is international connectivity. For most European research networks, this cost is a significantly smaller portion of their operational

<sup>5</sup> Using exchange rate as of June 2016.

### NREN Budgets 2013 – 2015

Measured in Millions of Euros



Timeliness	Result June 2014	Result June 2015	Target June 2016	Result June 2016
Survey of Responsiveness				
Users consider reported issues to be resolved in a timely manner (based on Member Survey)	84%	100%	80%	100%

The speed at which REANNZ staff identify and resolve faults and performance issues is not only a measure of the quality of our customer service, but also a measure of the effectiveness of our network operations. REANNZ proactively monitors the network in real time for performance issues, and regularly communicates both planned and unplanned outages to users. Users can also log incidents through the REANNZ helpdesk, which are quickly assigned to REANNZ engineers for resolution.

In 2016, out of 54 survey respondents only seven had logged a fault with our helpdesk. All seven considered their issue to have been resolved in a timely manner. It is also an indication of REANNZ's proactive approach to fault or issue identification, with REANNZ often identifying and resolving issues before they cause a fault that would impact our users' experience.

### Actual Revenue and Expenses

Output: The advanced research, education and innovation network and related tools

	Actual 2016 \$000	Budget 2016 \$000
<b>Revenue</b>		
Crown revenue	5,533	10,750
Network revenue	8,080	8,138
Other revenue	3,483	3,443
<b>Total revenue</b>	<b>17,096</b>	<b>22,331</b>
<b>Expenses</b>		
Amortisation & depreciation	1,753	2,128
Network expenses	7,084	8,214
Operating expenses	3,997	5,689
<b>Total expenditure</b>	<b>12,834</b>	<b>16,031</b>
<b>Surplus / (Deficit) before foreign currency gains / (losses)</b>	<b>4,262</b>	<b>6,300</b>
Foreign currency gains / (losses)	(1,529)	-
<b>Surplus / (Deficit)</b>	<b>2,733</b>	<b>6,300</b>

### Performance Against Estimates of Appropriations<sup>6</sup>

Assessment of Performance	2014/15	2014/15	2015/16	2015/16
	Budgeted Standard	Estimated Actual Standard	Budgeted Standard	Estimated Actual Standard
Grant made to Research and Education Advanced Network New Zealand in accordance with Crown funding agreement	Achieved	Achieved	Achieved	Achieved
Monitor and assess reporting from Research and Education Advanced Network New Zealand against the Crown funding agreement	Achieved	Achieved	Achieved	Achieved

6. REANNZ received \$4 million as an appropriation from Vote Business, Science and Innovation. The appropriation is intended to achieve an improvement in innovation, knowledge and learning by connecting New Zealand research and education networks to each other and the world through an advanced research and education network.

# FINANCIAL STATEMENTS

## Statement of Comprehensive Revenue and Expense

For the year ended 30 June 2016

	NOTE	ACTUAL 2016 \$000	BUDGET 2016 \$000	ACTUAL 2015 \$000
<b>Revenue</b>				
Grant revenue	2	5,533	10,750	4,057
Network revenue		8,080	8,138	8,007
Other revenue	2	2,817	2,906	2,559
Interest revenue		666	537	583
<b>Total Revenue</b>		<b>17,096</b>	<b>22,331</b>	<b>15,206</b>
<b>Network Expenses</b>				
Depreciation and amortisation		1,578	1,918	2,005
Employment expenses		1,412	1,511	1,111
Network operating expenses	3	5,672	6,703	4,685
<b>Total Network Expenses</b>		<b>8,662</b>	<b>10,132</b>	<b>7,801</b>
<b>Gross Surplus / (Loss)</b>		<b>8,434</b>	<b>12,199</b>	<b>7,405</b>
<b>Less:</b>				
<b>Operating Expenses</b>				
Audit		34	39	36
Depreciation and amortisation		174	210	179
Directors fees	4	119	122	119
Employment expenses		2,049	2,595	1,681
Other operating expenses		1,014	1,150	747
Professional services		356	456	272
Operating leases		162	140	129
Travel expenses		264	274	174
<b>Total Operating Expenses</b>		<b>4,172</b>	<b>4,986</b>	<b>3,337</b>
<b>Surplus / (Deficit) excluding gains / (losses)</b>		<b>4,262</b>	<b>7,213</b>	<b>4,068</b>
Foreign currency gains / (losses)	5	(1,529)	(913)	7,778
<b>Surplus / (Deficit)</b>		<b>2,733</b>	<b>6,300</b>	<b>11,846</b>
Other comprehensive revenue		-	-	-
<b>Total Comprehensive Revenue and Expense</b>		<b>2,733</b>	<b>6,300</b>	<b>11,846</b>

Explanations of major variances against budget are provided in note 25.

Research and Education Advanced Network New Zealand Limited

The Statement of Accounting Policies and Notes to the Financial Statements form part of and are to be read in conjunction with these financial statements

## Statement of Financial Position

As at 30 June 2016

	NOTE	ACTUAL 2016 \$000	BUDGET 2016 \$000	ACTUAL 2015 \$000
<b>ASSETS</b>				
<b>Current Assets</b>				
Cash and cash equivalents	6	3,143	6,663	5,007
Funds held in escrow	7	16,781	9,599	19,193
Receivables and debtors	8	3,446	3,485	3,333
GST receivable		177	(287)	(86)
Investments	9	18,161	11,000	11,080
Derivative financial instruments	10	379	(39)	702
Prepayments		373	753	471
Prepaid network expenses	11	389	472	389
<b>Total Current Assets</b>		<b>42,849</b>	<b>31,646</b>	<b>40,089</b>
<b>Non-Current Assets</b>				
Property, plant and equipment	12	13,068	13,154	13,568
Intangibles	13	-	-	1
Derivative financial instruments	10	685	(306)	2,009
Prepaid network expenses	11	2,921	7,914	1,435
<b>Total Non-Current Assets</b>		<b>16,674</b>	<b>20,762</b>	<b>17,013</b>
<b>Total Assets</b>		<b>59,523</b>	<b>52,408</b>	<b>57,102</b>
<b>LIABILITIES</b>				
<b>Current Liabilities</b>				
Accounts payable and accrued expenses	14	1,772	1,170	892
Employee entitlements	15	376	170	211
Revenue in advance	16	2,650	3,675	2,511
Deferred revenue	17	5,310	5,250	6,843
Deferred lease incentive		17	-	-
<b>Total Current Liabilities</b>		<b>10,125</b>	<b>10,265</b>	<b>10,457</b>
<b>Non-Current Liabilities</b>				
Deferred revenue	17	8,360	3,000	8,420
Deferred lease incentive		80	-	-
<b>Total Non-Current Liabilities</b>		<b>8,440</b>	<b>3,000</b>	<b>8,420</b>
<b>Net Assets</b>		<b>40,958</b>	<b>39,143</b>	<b>38,225</b>
<b>EQUITY</b>				
Contributed capital		16,001	16,001	16,001
Accumulated surplus / (deficit)		24,957	23,142	22,224
<b>Total Equity</b>	18	<b>40,958</b>	<b>39,143</b>	<b>38,225</b>

Explanations of major variances to budget are provided in note 25.

Research and Education Advanced Network New Zealand Limited

The Statement of Accounting Policies and Notes to the Financial Statements form part of and are to be read in conjunction with these financial statements

## Statement of Cash Flows

For the year ended 30 June 2016

	ACTUAL 2016 \$000	BUDGET 2016 \$000	ACTUAL 2015 \$000
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>			
<b>Cash was provided from (applied to)</b>			
Receipts from the Crown	4,000	4,000	4,000
Network revenue	8,088	8,151	7,792
Interest revenue	595	537	577
Other revenue	2,823	2,780	1,995
GST (net)	112	332	(2,310)
Payments to suppliers and employees	(10,134)	(12,835)	(8,567)
Prepayment for network connectivity	(1,874)	(6,750)	(1,804)
<b>Net Cash Flow from Operating Activities</b>	<b>3,610</b>	<b>(3,785)</b>	<b>1,683</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>			
<b>Cash was provided from (applied to)</b>			
Purchase of plant and equipment	(1,080)	(1,319)	(753)
Funds deposited in escrow	1,874	6,750	(15,000)
Term deposit investments	(7,000)	(1,000)	(5,022)
<b>Net Cash Flow from Investing Activities</b>	<b>(6,206)</b>	<b>4,431</b>	<b>(20,775)</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>			
<b>Cash was provided from (applied to)</b>			
Realised gain on foreign currency	732	191	-
<b>Net Cash Flow from Financing Activities</b>	<b>732</b>	<b>191</b>	<b>-</b>
<b>Net (Decrease) / Increase in Cash Held</b>	<b>(1,864)</b>	<b>837</b>	<b>(19,092)</b>
Cash at beginning of year	5,007	5,826	24,099
<b>Cash at End of Year</b>	<b>3,143</b>	<b>6,663</b>	<b>5,007</b>
Represented by:			
<b>Cash at Bank</b>	<b>3,143</b>	<b>6,663</b>	<b>5,007</b>

Explanations of major variances against budget are provided in note 25.

## Statement of Changes in Equity

For the year ended 30 June 2016

	NOTE	ACTUAL 2016 \$000	BUDGET 2016 \$000	ACTUAL 2015 \$000
Balance at 1 July		38,225	32,843	26,379
<b>Total Comprehensive Revenue and Expense for the Year</b>		<b>2,733</b>	<b>6,300</b>	<b>11,846</b>
<b>Owner Transactions</b>				
Capital contribution		-	-	-
Repayment of capital		-	-	-
<b>Equity at End of Year</b>	<b>18</b>	<b>40,958</b>	<b>39,143</b>	<b>38,225</b>

Explanations of major variances to budget are provided in note 25.

Signed on behalf of the Board:



**Jim Donovan**  
Board Chair

20 October 2016



**Susie Johnstone**  
Audit and Risk Committee Chair

20 October 2016

# Notes to the Financial Statements

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## 1. Statement of Accounting Policies

### 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's primary objective is to establish, own and operate a high-speed communications network for the research and education sector. As such, REANNZ's aim is to provide services to the public, rather than make a financial return.

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

The financial statements for REANNZ are for the year ended 30 June 2016 and were approved by the Board on 20 October 2016.

### Basis of preparation

The financial statements have been prepared on a going-concern basis, and the accounting policies have been applied consistently throughout the year.

### Statement of compliance

The financial statements of REANNZ have been prepared in accordance with the Crown Entities Act 2004, which includes the requirement to comply with generally accepted accounting practice in New Zealand (NZ GAAP).

The financial statements comply with Public Benefit Entity accounting standards.

The financial statements have been prepared in accordance with Tier 2 PBE Accounting Standards with reduced disclosures. REANNZ is eligible to report as a Tier 2 reporting entity on the basis that it does not have public accountability and is not large.

### Presentation currency and rounding

The financial statements are presented in New Zealand dollars (NZD) and all values are rounded to the nearest thousand (\$000).

### Summary of 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.

Significant accounting policies are included in the notes to which they relate.

Significant accounting policies that do not relate to a specific note are outlined below:

#### 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 Statement of Comprehensive Revenue and Expense.

Of material effect is the Hawaiki contract where substantial year end translation gains in 2014 and 2015 will be reversed over time as the escrow account is depleted to meet the terms of the contract. This will be recognised through the higher amortised cost, expressed in NZD, of the contract.

#### Cash flow statement

The 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 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.

"Financing activities" are those activities relating to changes in equity of REANNZ.

"Operating activities" include all transactions and other events that are not investing or financing activities.

### Goods and Services Tax (GST)

These financial statements have been prepared on a GST exclusive basis except for accounts receivable and accounts payable that are stated inclusive of 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 Statement of Cash Flows.

Commitments and contingencies are disclosed exclusive of GST.

### 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.

### Budget figures

The budget figures are those that form part of the REANNZ 2015/16 Statement of Performance Expectations dated 21 May 2015 and approved by the Board.

The budget figures have been prepared in accordance with generally accepted accounting practice and are consistent with the accounting policies adopted by REANNZ for the preparation of the financial statements.

### Critical accounting estimates and assumptions

In preparing these financial statements, REANNZ has made estimates and assumptions concerning the future. These estimates and assumptions may differ from subsequent actual results. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

The estimates and assumptions that have significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are:

- › Useful lives and residual values of property, plant and equipment — refer to note 12.

## 2. Revenue

### Accounting Policy

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

#### Grant revenue

REANNZ is funded in part by the Crown. Where a grant is provided to partially fund the operation of a high-speed communication network for the research and education sector, REANNZ considers there are no conditions attached, and the grant is recognised as revenue at the point of entitlement.

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 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.

#### Interest revenue

Interest revenue is recognised by accruing the interest due for the investment on a time proportion basis.

#### i. Grant revenue

	2016 \$000	2015 \$000
<b>Non-Exchange Transactions</b>		
Ministry of Business, Innovation & Employment Crown funding agreement	4,000	4,000
Ministry of Business, Innovation & Employment Crown funding agreement – Hawaiki Cable Managed Capacity	1,500	–
Ministry of Science and Innovation Hardship Fund	33	57
<b>Total grant revenue</b>	<b>5,533</b>	<b>4,057</b>

REANNZ entered into a Crown funding agreement with the Ministry of Business, Innovation and Employment ('MBIE') during the 2014 financial year. The agreement is for four years, expiring on 30 June 2017, and provides REANNZ with an annual operating grant. REANNZ received \$4 million during the year (2015: \$4M).

All conditions relating to the Crown funding agreement for annual operations have been met.

In June 2014, REANNZ received a \$15M grant expressly for the initial fee for a 25-year lease of managed capacity with Hawaiki Submarine Cable Limited Partnership. Grant revenue of \$1.5M was recognised this financial year, in line with the first milestone payment made. Should the cable project not be completed, any remaining grant monies will be returned to the Crown.

All conditions relating to the Crown funding agreement for the first milestone payment of the initial deposit for the 25-year lease of managed capacity have been met.

In June 2009, REANNZ received a \$900,000 grant from MBIE (formerly the Ministry for Research, Science & Technology) for the purpose of connecting remote locations to the REANNZ network. Grant monies relating to these connections are recognised in the Statement of Comprehensive Revenue and Expense as the related connectivity expenditure is incurred.

#### ii. Other revenue

	2016 \$000	2015 \$000
<b>Exchange Transactions</b>		
Managed services	1,343	710
Internet	1,198	703
Other	205	163
Videoconferencing service	71	286
ITP connection fees	–	467
National Education Network trial	–	230
<b>Total other revenue</b>	<b>2,817</b>	<b>2,559</b>

#### iii. Gross telecommunications services revenue

In accordance with the information disclosure requirements under section 83 of the Telecommunications Act 2001, gross telecommunications revenue for the year ended 30 June 2016 was \$10.69M (2015: \$10.36M). Revenue from grants, interest and other non-telecommunications services of \$6.39M (2015: \$4.06M) were excluded. Allowable deductions for payments to other telecommunications service providers of \$2.14M (2015: \$2.24M) were made.

## 3. Network operating expenses

	2016 \$000	2015 \$000
<b>National Network</b>		
Other network expenses	1,241	1,273
Fibre circuits	1,103	706
PoP accommodation	359	366
Connectivity	21	299
Asset disposals	17	23
<b>Total national network expenses</b>	<b>2,741</b>	<b>2,667</b>
<b>International Network</b>		
International connectivity	2,793	1,953
Other network expenses	138	51
PoP accommodation	–	14
<b>Total international network expenses</b>	<b>2,931</b>	<b>2,018</b>
<b>Total network operating expenses</b>	<b>5,672</b>	<b>4,685</b>

Network expenses include \$271,000 relating to operating lease expenses recognised during the year (2015: \$297,000).

## 4. Directors' fees

	2016 \$000	2015 \$000
The total value of remuneration paid or payable to each Board member during the year was:		
J Donovan (Chair)^	38	25
R Peat (Deputy Chair)*	24	–
S Hall*	19	–
S Johnstone	19	19
S Weaver	19	19
J Raine**	–	37
P Norman**	–	19
<b>Total Directors' fees</b>	<b>119</b>	<b>119</b>

^ appointed as Chair on 1 July 2015, previously Deputy Chair

\* appointed 1 July 2015

\*\* end of tenure 30 June 2015

There have been no payments made to committee members appointed to the Board who are not Directors during the year.

REANNZ provides a deed of indemnity to Directors for certain activities undertaken in the performance of REANNZ's functions.

REANNZ holds Directors and Officers Liability and Professional Indemnity insurance cover in respect of the liability of Board members and employees.

No Board members received compensation or other benefits in relation to cessation (2015: \$Nil).

## 5. Foreign currency gains / (losses)

	2016 \$000	2015 \$000
Realised foreign currency gains / (losses)	732	102
Unrealised foreign currency gains / (losses)		
Escrow account (USD)	(585)	4,193
Fair value losses on derivatives	(1,647)	3,056
Bank account (USD)	(29)	427
<b>Total foreign currency gains / (losses)</b>	<b>(1,529)</b>	<b>7,778</b>

In July 2014, NZ\$15M was deposited into a United States dollar (USD) denominated escrow account as the initial fee for a 25-year lease of managed capacity with the Hawaiki Submarine Cable Limited Partnership. The contract came into force during the year and the first milestone payment of US\$1.32M was made. At year end, the balance was US\$11.91M. The escrow account incurred unrealised losses as a result of the net movement in the NZD against the USD for the year.

Unrealised losses were made on forward USD contracts held with the New Zealand Debt Management Office (NZDMO) reflecting the decrease in the fair value of the contracts for the year. The losses were partially offset by realised gains on trades that were settled during the year.

As at 30 June 2016, REANNZ held 13 forward contracts (2015: 17 contracts) to purchase a total of US\$8.85M (2015: US\$11.57M). One contract is settled each quarter until July 2019. The contracts were entered into to mitigate foreign exchange exposure arising from quarterly network payments contractually required to be paid in USD.

## 6. Cash and cash equivalents

	2016 \$000	2015 \$000
Cash at bank and on hand	3,143	5,007
<b>Total cash and cash equivalents</b>	<b>3,143</b>	<b>5,007</b>

The total above includes NZ\$1.17M held in USD (2015: \$569,000).

## 7. Funds held in escrow

	2016 \$000	2015 \$000
Funds held USD escrow account	16,781	19,193
<b>Total funds held in escrow</b>	<b>16,781</b>	<b>19,193</b>

In July 2014, REANNZ entered into a 25-year lease of managed capacity with the Hawaiki Submarine Cable Limited Partnership. The initial fee of \$15M (US\$13.21M) was deposited into a USD denominated escrow account at this time, as required by the contract whereby all obligations are in USD. The first milestone payment of US\$1.32M was made in June 2016. The account incurred unrealised foreign exchange losses of \$585K for the year.

## 8. Receivables and debtors

### Accounting Policy

Accounts receivable are recognised at fair value. A provision for impairment of accounts receivable is made where there is objective evidence that REANNZ will not collect all amounts due according to the original terms of the receivable. When this occurs, the receivable is recorded at amortised cost, less provision for impairment. When the receivable is uncollectible, it is expensed in the Statement of Comprehensive Revenue and Expense.

BREAKDOWN OF RECEIVABLES AND DEBTORS	2016 \$000	2015 \$000
<b>Exchange Transactions</b>		
Trade Receivables	2,574	2,487
Forward USD contract receivable	858	827
Sundry Debtors	14	19
<b>Total receivables and debtors</b>	<b>3,446</b>	<b>3,333</b>

In line with member contracts, membership fees are due quarterly in advance. Of the amount of receivables and debtors above, \$2.51M including GST (2015: \$2.37M including GST) relate to membership fees and services to be provided by REANNZ during the coming financial year. These fees are shown as revenue received in advance until the service period begins, at which time the fees are recognised as revenue in the Statement of Comprehensive Revenue and Expense.

The carrying value of debtors and other receivables approximates their fair value. REANNZ expects to recover all outstanding receivables and debtors.

REANNZ holds no collateral as security or other credit enhancements over receivables that are past due or impaired.

## 9. Investments

### Accounting Policy

#### 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.

BREAKDOWN OF INVESTMENTS	2016 \$000	2015 \$000
Term Deposits (maturity within 12 months)	18,161	11,080
<b>Total investments</b>	<b>18,161</b>	<b>11,080</b>

There is no impairment provision for investments.

## 10. Derivative financial instruments

### Accounting Policy

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 re-measured to their fair value at each balance date with the resulting gain or loss recognised in the 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 is classified as non-current.

Derivative financial instruments are recognised at fair value in the Statement of Financial Position.

On 30 June 2016, the fair value of derivative financial instrument assets was \$1.06M (2015: \$2.71M). Of this amount, \$379,000 relates to USD forward contracts due to be settled within 12 months, with the remaining amount to be settled between one and three years.

The fair value of forward foreign exchange contracts have been determined using a discounted cash flows valuation technique based on quoted market prices. The inputs into the valuation model are from independently sourced market parameters such as currency rates. Most market parameters are implied from forward foreign exchange contract prices.

## 11. Prepaid network expenses

Prepaid network expenses relate to core connectivity and network service operations and management. These prepayments will be expensed to the Statement of Comprehensive Revenue and Expense on a straight-line basis over the contract term.

	2016 \$000	2015 \$000
Balance at beginning of year	1,824	828
Prepayment expensed during year	(388)	(808)
Payments made during the year	1,874	1,804
<b>Net book value</b>	<b>3,310</b>	<b>1,824</b>
<b>Current / Non-current split</b>		
Current	389	389
Non-current	2,921	1,435
<b>Total prepaid network expenses</b>	<b>3,310</b>	<b>1,824</b>

A prepayment of \$1.87M was made in June 2016 to the Hawaiki Submarine Cable Limited Partnership for the first milestone under our 25-year lease for managed capacity.

The contract requires a total of four milestone payments in USD, with the remaining three payments to be paid over the next three financial years as key construction milestones are met. Crown funding for the milestone payments of \$15M was received in June 2014 (see note 2) and was deposited into a USD denominated escrow account (US\$13.21M).

The prepayment made in June 2016 of US\$1.32M converted to a NZD value of \$1.87M compared to NZ\$1.5M on the escrow deposit date. The \$374,000 in foreign exchange loss is included in the cost of the prepayment, to be amortised over the 25-year lease period from the date the cable is ready for service.

## 12. Property, plant and equipment

### Accounting Policy

Property, plant and equipment consists of six classes, which are measured as follows:

- › Leasehold improvements, at cost less accumulated depreciation and impairment losses
- › Routers, switches and optical equipment, at cost less accumulated depreciation and impairment losses
- › Information technology equipment, at cost less accumulated depreciation and impairment losses
- › Office equipment, at cost less accumulated depreciation and impairment losses
- › PoP equipment, at cost less accumulated depreciation and impairment losses
- › Fibre and fibre housing, at cost less accumulated depreciation and impairment losses.

### 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 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 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 & 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 by the Directors 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 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 Statement of Comprehensive Revenue and Expense.

Any reversal of an impairment loss is recognised in the 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 re-valued, 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 Statement of Comprehensive Revenue and Expense, a reversal of impairment loss is also recognised in the Statement of Comprehensive Revenue and Expense.

### Critical accounting estimates and assumptions

#### Estimating useful lives and residual values of property, plant and equipment

At each balance date, the useful lives and residual values of property, plant and equipment are reviewed. Assessing the appropriateness of useful life and residual value estimates of property, plant and equipment requires a number of factors to be considered such as the physical condition of the asset, expected period of use of the asset by REANNZ, and expected disposal proceeds from the future sale of the asset.

An incorrect estimate of the useful life or residual value will affect the depreciation expense recognised in the Statement of Comprehensive Income and Expense, and carrying amount of the asset in the Statement of Financial Position. REANNZ minimises the risk of this estimation uncertainty by:

- › physical inspection of assets;
- › asset replacement programmes;
- › review of second-hand market for similar assets.

REANNZ has not made significant changes to past assumptions concerning useful lives and residual values.

Movements for each class of property, plant and equipment are as follows:

BREAKDOWN OF PROPERTY, PLANT AND EQUIPMENT	OFFICE EQUIPMENT \$'000	ICT EQUIPMENT \$'000	NATIONAL POP EQUIPMENT \$'000	INTERNATIONAL POP EQUIPMENT \$'000	LEASEHOLD IMPROVEMENTS \$'000	NETWORK SERVICES \$'000	FIBRE & FIBRE HOUSING \$'000	WORK IN PROGRESS \$'000	TOTAL \$'000
<b>Cost or valuation</b>									
Balance at 1 July 2014	78	428	8,564	123	152	518	8,202	–	18,065
Balance at 30 June 2015	87	493	9,153	123	159	462	8,202	–	18,679
Additions	10	186	642	–	379	16	–	37	1,270
Sales / write offs	(1)	(138)	(100)	–	(157)	(432)	–	–	(828)
<b>Balance as at 30 June 2016</b>	<b>96</b>	<b>541</b>	<b>9,695</b>	<b>123</b>	<b>381</b>	<b>46</b>	<b>8,202</b>	<b>37</b>	<b>19,121</b>
<b>Accumulated depreciation</b>									
Balance at 1 July 2014	57	260	1,748	70	59	516	358	–	3,068
Balance at 30 June 2015	66	372	3,236	97	111	460	769	–	5,111
Depreciation expense	8	107	1,148	14	58	6	410	–	1,751
Disposals	(1)	(136)	(83)	–	(157)	(432)	–	–	(809)
<b>Balance at 30 June 2016</b>	<b>73</b>	<b>343</b>	<b>4,301</b>	<b>111</b>	<b>12</b>	<b>34</b>	<b>1,179</b>	<b>–</b>	<b>6,053</b>
<b>Carrying Amounts</b>									
Balance at 1 July 2014	21	168	6,816	53	93	2	7,844	–	14,997
Balance at 30 June 2015	21	121	5,917	26	48	2	7,433	–	13,568
<b>Balance at 30 June 2016</b>	<b>23</b>	<b>198</b>	<b>5,394</b>	<b>12</b>	<b>369</b>	<b>12</b>	<b>7,023</b>	<b>37</b>	<b>13,068</b>

The net carrying amount of fibre held under finance leases is \$1.91M (2015: \$2.02M). Also refer to note 19.

## 13. Intangible assets

### Accounting Policy

Software is a finite life intangible and is recorded at cost less accumulated amortisation and impairment. Amortisation is charged on a straight-line basis over the estimated useful life of the intangible asset.

Costs associated with maintaining computer software are recognised as an expense when incurred.

Staff training costs are recognised as an expense when incurred.

Costs associated with the development and maintenance of the REANNZ website are recognised as an expense when incurred.

The useful life and associated amortisation rates of major classes of intangible assets have been estimated as follows:

Acquired computer software	3 years	33.3%

### Impairment of intangible assets

Refer to the policy for impairment of property, plant and equipment in note 12. The same approach applies to the impairment of intangible assets.

BREAKDOWN OF INTANGIBLE ASSETS	SOFTWARE \$000
<b>Gross carrying amount</b>	
Balance at 1 July 2014	62
Balance at 30 June 2015	52
Additions	–
Disposals	(3)
<b>Balance at 30 June 2016</b>	<b>49</b>
<b>Accumulated amortisation</b>	
Balance at 1 July 2014	60
Balance at 30 June 2015	51
Amortisation expense	1
Disposals	(3)
Impairment losses	–
<b>Balance at 30 June 2016</b>	<b>49</b>
<b>Carrying Amounts</b>	
At 1 July 2014	2
At 30 June 2015	1
<b>At 30 June 2016</b>	<b>–</b>

There are no restrictions over the title of intangible assets, nor are any intangible assets pledged as security for liabilities.

## 14. Accounts payable and accrued expenses

### Accounting Policy

Short-term payables are recorded at the amount payable.

BREAKDOWN OF PAYABLES AND ACCRUED EXPENSES	2016 \$000	2015 \$000
<b>Exchange Transactions</b>		
Creditors	1,590	505
Accrued expenses	182	387
<b>Total accounts payable and accrued expenses</b>	<b>1,772</b>	<b>892</b>

## 15. Employee entitlements

### Accounting Policy

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.

BREAKDOWN OF EMPLOYEE ENTITLEMENTS	2016 \$000	2015 \$000
Accrued salaries and wages including bonuses	212	–
Annual leave	164	211
<b>Total employee entitlements</b>	<b>376</b>	<b>211</b>

It is expected that all employee entitlements will be settled within 12 months of balance date.

## 16. Revenue in advance

	2016 \$000	2015 \$000
<b>Exchange Transactions</b>		
Fees received in advance	471	452
Fees invoiced but not yet received	2,179	2,059
<b>Total revenue in advance</b>	<b>2,650</b>	<b>2,511</b>

Revenue in advance includes membership fees billed quarterly in advance, and fees for services billed in advance. All services billed in advance will be provided by REANNZ in the coming financial year. These fees are shown as revenue received in advance until the service period begins, at which time the fees will be recognised as revenue in the Statement of Comprehensive Revenue and Expense.

## 17. Deferred revenue

	2016 \$000	2015 \$000
<b>CURRENT PORTION</b>		
<b>Non-Exchange Transactions</b>		
Ministry of Science & Innovation Hardship Fund	–	33
Ministry of Business, Innovation & Employment Crown funding – Hawaiki Cable Managed Capacity Grant (see note 2)	5,250	6,750
<b>Exchange Transactions</b>		
Other prepayments for services	60	60
<b>Total current portion</b>	<b>5,310</b>	<b>6,843</b>
<b>NON-CURRENT PORTION</b>		
<b>Non-Exchange Transactions</b>		
Ministry of Business, Innovation & Employment Crown funding – Hawaiki Cable Managed Capacity Grant	8,250	8,250
<b>Exchange Transactions</b>		
Other prepayments for services	110	170
<b>Total non-current portion</b>	<b>8,360</b>	<b>8,420</b>
<b>Total deferred revenue</b>	<b>13,670</b>	<b>15,263</b>

REANNZ received a \$15M grant from the Ministry of Business Innovation & Employment in June 2014 to enter into a 25-year lease of managed capacity with the Hawaiki Submarine Cable Limited Partnership. The grant is recognised as revenue when contractual milestones are met and liabilities fall due. The first milestone payment of 10% was made in June 2016. Accordingly, \$1.5M of the grant was recognised as revenue. The remaining \$13.5M grant is expected to be recognised as revenue over the next three financial years. Should the project not be completed, the unused funding will be returned to the Crown.

## 18. Equity

### Capital management

REANNZ's capital is its equity, which comprises accumulated funds and contributed capital. Equity is measured as the difference between total assets and total liabilities.

REANNZ is subject to the financial management and accountability provisions of the Crown Entities Act 2004, which impose restrictions in relation to borrowings, acquisition of securities, issuing guarantees and indemnities and the use of derivatives.

REANNZ manages its equity as a by-product of prudently managing revenues, expenses, assets, liabilities, investments, and general financial dealings to ensure REANNZ effectively achieves its objectives and purpose, whilst remaining a going concern.

### Contributed capital

At 30 June 2016, share capital comprised 1,816 ordinary shares (2015: 1,816). All issued shares are fully paid and have no par value.

BREAKDOWN OF EQUITY	2016 \$000	2015 \$000
<b>Contributed capital</b>		
Balance at 1 July	16,001	16,001
Capital contribution	-	-
Repayment of capital	-	-
<b>Balance at 30 June</b>	<b>16,001</b>	<b>16,001</b>
<b>Accumulated surplus / (deficit)</b>		
Balance at 1 July	22,224	10,378
Surplus / (deficit) for the year	2,733	11,846
<b>Balance at 30 June</b>	<b>24,957</b>	<b>22,224</b>
<b>Total equity</b>	<b>40,958</b>	<b>38,225</b>

## 19. Capital commitments and operating leases

### i. Capital commitments

There were no capital commitments at balance date.

### ii. Operating lease commitments

#### Accounting Policy

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 Statement of Comprehensive Income 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 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.

Operating leases relate to the following activities:

- Office premises at Level 5, QuallT House, The Terrace, Wellington;
- Network PoP accommodation and associated support facilities; and
- Network equipment leases.

The future aggregate minimum lease payments payable under non-cancellable operating leases are as follows:

	2016 \$000	2015 \$000
Less than one year	462	353
Between one and two years	418	236
Between two and five years	774	406
Later than five years	141	-
<b>Total operating lease commitments</b>	<b>1,795</b>	<b>995</b>

There are no restrictions placed on REANNZ by any of its leasing arrangements.

### iii. Connectivity and managed service commitments

Connectivity and managed service commitments relate to:

- › Payments to suppliers for national and international connectivity services
- › Payments to suppliers for service management of the national network.

	2016 \$000	2015 \$000
Less than one year	4,307	2,710
Between one and two years	4,957	3,328
Between two and five years	12,231	8,208
Later than five years	49,590	-
<b>Total connectivity and managed service commitments</b>	<b>71,085</b>	<b>14,246</b>

In June 2014, REANNZ entered into a 25-year lease of managed capacity with Hawaiki Submarine Cable Limited Partnership. The upfront cost of the lease is \$15M, payable in USD, to be paid in instalments over the next three financial years. REANNZ will recognise the upfront cost of the lease over the term of the contract, commencing when the cable is ready for service.

The first condition of the lease was met on 31 March 2016, at which point the contract became non-cancellable.

Following ready for service, REANNZ will be contractually bound to meet annual lease payments over the 25 year term. The cumulative future contractual commitment is in excess of \$50M, and is reflected in the table above.

### iv. Finance leases

#### Accounting Policy

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 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. The net carrying amount of the leased assets is \$1.91M (2015: \$2.02M).

The finance lease term is for the expected economic life of the asset, and has been prepaid. As such, there are no future finance lease payments payable.

REANNZ does not hold an option to purchase the asset at the end of the lease term.

## 20. Contingencies

There were no contingent assets or liabilities at balance date for which disclosure is required (2015: \$Nil).

## 21. Related party transactions

REANNZ is a wholly owned entity of the Crown.

Related party disclosures have not been made for transactions with related parties that are within a normal supplier or client/recipient relationship with terms and conditions no more or less favourable than those that it is reasonable to expect REANNZ would have adopted in dealing with the party at arm's length in the same circumstances.

Further, transactions with other government agencies (for example, government departments and Crown entities) are not disclosed as related party transactions when they are on normal terms and conditions consistent with the normal operating arrangements between government agencies.

There were no related party transactions during the year that required disclosure.

## Key management personnel compensation

The compensation of the Board of Directors and the Chief Executive Officer and senior management (the Leadership Team), being the key management personnel of REANNZ, is set out below:

	2016 \$000	2015 \$000
<b>Directors</b>		
Remuneration	119	119
Full-time equivalent members	1.21	0.90
<b>Leadership Team</b>		
Remuneration	916	776
Full-time equivalent members	4.0	3.0
<b>Total key management personnel remuneration</b>	<b>1,035</b>	<b>895</b>
<b>Total full-time equivalent personnel</b>	<b>5.21</b>	<b>3.90</b>

The full-time equivalent for Board members has been determined based on the frequency and length of Board and committee meetings, estimated time for Board members to prepare for meetings and attendance at external stakeholder meetings.

An analysis of Board member remuneration is provided in note 4.

## 22. Employee remuneration

Remuneration and other benefits of \$100,000 per annum or more paid or payable to employees in their capacity as employees were:

	2016 EMPLOYEES	2015 EMPLOYEES
\$100,000 – \$109,999	2	1
\$110,000 – \$119,999	2	–
\$120,000 – \$129,999	2	1
\$130,000 – \$139,999	1	4
\$140,000 – \$149,999	2	1
\$150,000 – \$159,999	1	1
\$160,000 – \$169,999	2	1
\$190,000 – \$199,999	1	–
\$200,000 – \$209,999	1	–
\$210,000 – \$219,999	1	–
\$340,000 – \$349,999	–	1

There were two Chief Executives during the year.

Steve Cotter held the position until October 2015 when Nicole Ferguson was appointed.

During the year ended 30 June 2016 REANNZ paid no compensation or other benefits in relation to cessation to employees (2015: \$Nil).

## 23. Events after balance date

There are no events subsequent to reporting date, of which the Directors are aware, that would have a material impact on the financial statements for the period ended 30 June 2016 (2015: \$Nil).

## 24. Financial instruments

### Financial instrument categories

The carrying amount of financial asset and liability categories are as follows:

	2016 \$000	2015 \$000
<b>Fair value through surplus or deficit – held for trading</b>		
Derivative financial instrument assets	1,064	2,711
<b>Financial liabilities measured at amortised cost</b>		
Accounts payable and accrued expenses (excluding income in advance, taxes payable and grants received subject to conditions)	1,772	892
Finance leases	1,910	2,000
<b>Total financial liabilities measured at amortised cost</b>	<b>3,682</b>	<b>2,892</b>
<b>Loans and receivables</b>		
Cash and cash equivalents	3,143	5,007
Funds held in escrow	16,781	19,193
Debtors and other receivables	3,446	3,333
Investments — term deposits	18,161	11,080
<b>Total loans and receivables</b>	<b>41,531</b>	<b>38,613</b>

## 25. Explanation of major variances to budget

At the time of budgeting in early 2015, it was expected that two milestone payments would be made under the major contract in place for an anchor tenancy on the Hawaiki cable. Best estimates were used to forecast the timing of the completion of each milestone however the contract was delayed during the year. This delay was the major driver of the variance to budget for 2015/16 affecting prepaid network expenses, revenue recognition, and unrealised foreign exchange losses.

### Statement of comprehensive revenue and expense

#### Revenue

The government grant relating to the 25-year managed capacity lease with the Hawaiki Submarine Cable Limited Partnership is recognised in line with payments made when key construction milestones are met. Only one of the two budgeted milestone payments of \$5.25M was made during the year.

#### Network expenses

Network expenses were less than expected due to the deferral of capital expenditure replacing fully depreciated network equipment resulting in lower than expected depreciation costs and capacity upgrades that were deferred till the next financial year. There was also a saving, offset by reduced revenue, from the sunset of a service offering contracted through a third party.

#### Operating expenses

Overall operating expenses were under budget for the year. The largest contributor to this was unfilled vacancies.

#### Foreign currency gains / (losses)

Unrealised exchange losses of \$2.26M are represented by foreign exchange losses on USD denominated bank accounts and fair value losses on derivative financial instruments at balance date. The unrealised losses are partially offset by \$732K realised gains on the settlement of forward foreign currency trades.

## Statement of financial position

The additional funds held in escrow, higher deferred revenue and reduced prepaid network expenses are all directly related to the delay in the commencement of the Hawaiki cable project.

Invoices for capital expenditure on network equipment and GST payable on the first milestone of the Hawaiki cable project were the main contributors to the payables variance at balance date.

The net asset position is better than expected, despite the Hawaiki delays, due to the accumulated effect of the foreign exchange translation gains on the reported balance escrow account and the savings in cash operating costs over the past two years which are reflected in increased term deposits.

### Statement of cash flows

Network and operating expenses were lower than expected for the year resulting in a positive variance to budget in payments to suppliers and employees.

More funds than expected were transferred to term deposits held for future investment in the network. This was partly due to decisions about immediate cash flow needs and also a result of timing of expenditure and the savings in expenses.

Two milestones for the Hawaiki cable project were expected to occur during the financial year however only one payment was made. This is reflected in the prepaid network connectivity and escrow deposit variances.

## Independent Auditor's Report

To the readers of Research and Education Advanced Network New Zealand's financial statements and performance information for the year ended 30 June 2016

The Auditor-General is the auditor of Research and Education Advanced Network New Zealand (REANNZ). The Auditor-General has appointed me, Andrew Clark, using the staff and resources of Audit New Zealand, to carry out the audit of the financial statements and the performance information, including the performance information for an appropriation, of REANNZ on her behalf.

### Opinion on the financial statements and the performance information

We have audited:

- › the financial statements of REANNZ on pages 56 to 73, that comprise the statement of financial position as at 30 June 2016, the statement of comprehensive revenue and expense, statement of changes in equity and statement of cash flows for the year ended on that date and the notes to the financial statements that include accounting policies and other explanatory information; and
- › the performance information of REANNZ on pages 41 to 54.

In our opinion:

- › the financial statements of REANNZ:
  - › present fairly, in all material respects:
    - › its financial position as at 30 June 2016; and
    - › its financial performance and cash flows for the year then ended; and
  - › comply with generally accepted accounting practice in New Zealand and have been prepared in accordance with Public Benefit Entity Standards with reduced disclosure requirements.
- › the performance information:
  - › presents fairly, in all material respects, REANNZ's performance for the year ended 30 June 2016, including:
    - › for each class of reportable outputs:
      - › its standards of performance achieved as compared with forecasts included in the statement of performance expectations for the financial year;
      - › its actual revenue and output expenses as compared with the forecasts included in the statement of performance expectations for the financial year;

- › what has been achieved with the appropriation; and
- › the actual expenses or capital expenditure incurred compared with the appropriated or forecast expenses or capital expenditure.
- › complies with generally accepted accounting practice in New Zealand.

Our audit was completed on 20th October 2016. This is the date at which our opinion is expressed.

The basis of our opinion is explained below. In addition, we outline the responsibilities of the Board and our responsibilities, and explain our independence.

### Basis of opinion

We carried out our audit in accordance with the Auditor-General's Auditing Standards, which incorporate the International Standards on Auditing (New Zealand). Those standards require that we comply with ethical requirements and plan and carry out our audit to obtain reasonable assurance about whether the financial statements and the performance information are free from material misstatement.

Material misstatements are differences or omissions of amounts and disclosures that, in our judgement, are likely to influence readers' overall understanding of the financial statements and the performance information. If we had found material misstatements that were not corrected, we would have referred to them in our opinion.

An audit involves carrying out procedures to obtain audit evidence about the amounts and disclosures in the financial statements and the performance information. The procedures selected depend on our judgement, including our assessment of risks of material misstatement of the financial statements and the performance information, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the preparation of REANNZ's financial statements and performance information in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of REANNZ's internal control.

An audit also involves evaluating:

- › the appropriateness of accounting policies used and whether they have been consistently applied;
- › the reasonableness of the significant accounting estimates and judgements made by the Board;
- › the appropriateness of the reported performance information within REANNZ's framework for reporting performance;
- › the adequacy of the disclosures in the financial statements and the performance information; and
- › the overall presentation of the financial statements and the performance information.

We did not examine every transaction, nor do we guarantee complete accuracy of the financial statements and the performance information. Also, we did not evaluate the security and controls over the electronic publication of the financial statements and the performance information.

We believe we have obtained sufficient and appropriate audit evidence to provide a basis for our audit opinion.

### Responsibilities of the Board

The Board is responsible for preparing financial statements and performance information that:

- › comply with generally accepted accounting practice in New Zealand;
- › present fairly REANNZ's financial position, financial performance and cash flows; and
- › present fairly REANNZ's performance.

The Board's responsibilities arise from the Crown Entities Act 2004 and the Public Finance Act 1989.

The Board is responsible for such internal control as it determines is necessary to enable the preparation of financial statements and performance information that are free from material misstatement, whether due to fraud or error. The Board is also responsible for the publication of the financial statements and the performance information, whether in printed or electronic form.

### Responsibilities of the Auditor

We are responsible for expressing an independent opinion on the financial statements and the performance information and reporting that opinion to you based on our audit. Our responsibility arises from the Public Audit Act 2001.

### Independence

When carrying out the audit, we followed the independence requirements of the Auditor-General, which incorporate the independence requirements of the External Reporting Board.

Other than the audit, we have no relationship with or interests in REANNZ.



**Andrew Clark**  
Audit New Zealand  
On behalf of the Auditor-General  
Wellington, New Zealand

## Members

### Universities



### Crown Research Institutes



### Polytechnics & Wānanga



### Other members



REANZ