

salesforce

Trail to Net Zero for Aotearoa New Zealand



2022





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1. Executive Summary

To address climate change New Zealand is introducing multi-pronged mitigation and adaptation efforts focusing on emissions pricing, research and development, funding and financing for sustainable infrastructure, as well as incentives to switch to low-emission vehicles.

Businesses can contribute significantly towards New Zealand's trail towards net zero. Salesforce has introduced Sustainability as a core value and a Climate Action Plan which includes six sustainability priorities and serves as a blueprint for the journey towards net zero.

Salesforce achieved net zero residual emissions across its full value chain and 100 percent renewable energy for its global operations.

Salesforce's Net Zero Cloud solution is an important platform to help organisations accelerate the journey to net zero. It tracks current emissions, forecasts emission patterns, and enables decision making. Salesforce's Net Zero Cloud helps streamline and simplify the carbon emissions reporting process. Further, Salesforce is enabling sequestration of 100 gigatons of carbon through the conservation, restoration, and growth of 1 trillion trees, protecting oceans, and energising the ecopreneur revolution.

Commissioned by Salesforce, and prepared by Access Partnership, this report focuses on sustainability efforts in New Zealand. It examines the policy environment, evaluates the economic and environmental gains from transitioning to cloud computing, and provides key insights on business sentiment and readiness to address climate change. The report highlights the climate change efforts of Salesforce and provides policy recommendations for New Zealand to accelerate climate action.



The report finds:

- **New Zealand's approach to achieving the 2050 net zero target is supported by business and encouraged for suppliers.** New Zealand's decision to set a net zero emission target by 2050 has resonated well with business, with 72 percent of surveyed managers citing their support for it, and 56 percent of managers surveyed say if a supplier business had a net zero target, then it would make them more likely to purchase their products/ services. New Zealand has released an Emissions Reduction Plan targeting multiple economic sectors, and is working on a National Adaptation Plan (NAP) to increase resilience to climate change and has intensified cooperation at the international level.
- **Greater awareness required by government and organisations of economic opportunities in a net zero economy.** A majority of New Zealanders indicated that net zero targets would result in more jobs or not impacting jobs, with 39 percent indicating no impact on jobs, and 28 percent believe it will result in more jobs. On the other hand only 21 percent believed there would be less jobs, and 12 percent were unsure of the impact. This highlights the need for awareness by government and organisations of economic opportunities in a net zero economy as highlighted in this report.
- **Support for the development of renewable energy.** Government initiatives on renewable energy technology have played an important role in New Zealand's climate change mitigation efforts. Seventy nine percent of managers surveyed supported current government initiatives that encourage development of renewable energy technology.

The report makes five recommendations that New Zealand can consider for accelerating its efforts to address climate change:



Develop cutting-edge climate technologies: New Zealand should support innovations that reduce emissions and increase energy efficiency. It should promote startups, ecopreneurs, and public/private partnerships, and those who are working on innovative climate change initiatives.



Address sustainability skills gap: Organisations need to focus on creating a workforce equipped with skills to work in the field of climate change. Upskilling initiatives should prepare employees to understand the imperative for climate action and make decisions aligned with their organisational goals.



Use Environment Artificial Intelligence (AI): There are many potential uses of harnessing AI to achieve sustainability outcomes. Early-stage projects are already underway to support the environment, including to bolster biodiversity, reduce pollution, and protect marine resources.¹ Other potential uses of environment AI include smarter decision making for decarbonising industries and how to efficiently allocate renewable energy. Improvements in the availability and interoperability of data, will further support the application of AI across different sectors.



Increase investment in cloud: The New Zealand government should encourage adoption of cloud computing considering its lower environmental impact. It reduces energy consumption, waste generation, and carbon emissions. This report reveals that a 0.4 million metric tonne (Mt) CO₂ emissions reduction in 2022 can be achieved by migrating to the cloud, which rises to 0.5 million Mt CO₂ emissions reduction if cloud operates fully on renewable power.



Adopt a shared digital platform to track emissions: Government and organisations should adopt a shared digital platform to track emissions, and forecast emission patterns. Having a shared digital platform will ensure better decision making with a single source of truth when measuring and tracking emissions within their own organisation and potentially their supply chain.

2. New Zealand and Sustainability

New Zealand is vulnerable to the effects of climate change and biodiversity loss. Some of the causes include introduced invasive species, changes in land and sea use, direct exploitation and harvesting (including water extraction), and pollution.

The Intergovernmental Panel on Climate Change (IPCC) report has noted growing evidence of stress to water supply and agriculture. Ongoing coastal development and population growth, particularly from the Northland region to the Bay of Plenty are projected to exacerbate risks of rising sea-levels and increase severity and frequency of storms and coastal flooding by 2050.²

New Zealand committed to reaching net-zero carbon emissions by 2050, including the legislative mandate through the Climate Change Response (Zero Carbon) Amendment Act in 2019. To make progress towards meeting its 2050 net zero target, a range of measures have been implemented including:

- Reforms to the New Zealand Emissions Trading Scheme (ETS) in 2020;³
- Setting the public sector on the path to carbon neutrality by 2025;⁴
- Banning of new low and medium temperature coal boilers from the end of 2021 and phasing out of existing ones by 2037;⁵
- Sustainable finance reforms such as legislation for mandatory climate-related disclosures⁶ and establishment of the New Zealand Green Investment Finance;⁷ and
- Investments in public transport, as well as incentives for citizens to switch to cleaner cars.⁸

New Zealand's electricity generation is already around 80 percent renewable, with just over half of that provided by hydro power.⁹

New Zealand ranks 35th on the 2022 Climate Change Performance Index (CCPI), dropping seven places from 28th position in 2021.¹⁰ The drop stems in part from the way Nationally Determined Contribution (NDC) targets are structured, allowing net emissions to continue to increase.¹¹ New Zealand intends to achieve NDC



targets through a combination of domestic emissions reduction, international emission trading schemes, and carbon dioxide removal from forests.¹² Biogenic methane – methane from agriculture and waste (accounting for over 40 percent of New Zealand’s emissions), international aviation and shipping are kept outside of the net zero target’s scope.

New Zealand has released the Emissions Reduction Plan (ERP), confirming NZD2.9 billion over four years to fund measures across multiple sectors, including incentives for electric cars, improving energy efficiency, supporting the switch to low emissions fuels, and helping reduce methane emissions from livestock.

The ERP takes a whole of government approach to achieving the country’s first emissions budget (2022-2025) and offers a timely opportunity for New Zealand to turn its climate commitments into action.

The New Zealand government is also working on the National Adaptation Plan (NAP) to increase resilience to climate change.¹³ The draft NAP highlights three focus areas – reform of planning and response systems; provision of data and tools to guide assessment and reduction of climate risks; and embedding of climate resilience and adaptation in government policy.

On the international stage, New Zealand is taking an active role in forging partnerships to address various aspects of climate change adaptation and mitigation, including with California to enhance cooperation on climate change,¹⁴ with Japan on agriculture¹⁵ and renewable energy¹⁶ and a sustainable aviation arrangement with Singapore.¹⁷



3. Salesforce's Approach to Sustainability

Sustainability is one of Salesforce's core values along with Trust, Customer Success, Innovation, and Equality. Salesforce has been on a sustainability transformation journey for over a decade now. Salesforce's Climate Action Plan¹⁸ acts as a blueprint for the journey to net zero and outlines six sustainability priorities for Salesforce:



Emissions reduction by initiatives like business travel emission reduction, low carbon cloud infrastructure, work from anywhere, and supplier enablement.



Carbon removal by enhancing carbon removal tools of present and scaling future technology-based carbon removal opportunities.



Trillion trees and ecosystem restoration by taking action to enhance the world's natural systems to sequester carbon from the atmosphere.



Education and mobilisation by raising awareness of climate change, and enabling behaviour change to embrace low-carbon solutions.



Innovation by supporting and investing in ecopreneurs and their ideas and technologies to scale.



Regulation and policy by working with policymakers on topics like emissions reduction, reorientation of economies, and fostering an equitable and resilient society.



Salesforce has increased investment in emission reduction initiatives, achieved net zero across its value chain, 100 percent renewable energy for its operations, and funded more than 40 million trees as part of its 100 million trees goal. Today, Salesforce is a net zero company.

In the year 2022, Salesforce initiated the institutionalisation of its sustainability program in New Zealand to make its sustainability journey more inclusive. Just ahead of COP26, Salesforce announced two new natural climate solutions:¹⁹

A global tree equity and urban reforestation initiative to engage ecopreneurs, organisations and volunteers in cities with limited access to green spaces to make cities greener around the world



Salesforce's first blue carbon program to conserve, protect, and restore coastal and marine ecosystems, and to purchase one million tons of blue carbon credits over four years.



At the World Economic Forum Annual Meeting in Davos in May 2022, Salesforce announced plans to invest USD 100 million through purchase of carbon credits in technologies that remove carbon from the atmosphere at scale.²⁰ Recognising that carbon removal is a key tool to address climate change, Salesforce is committed to help scale Carbon Dioxide Removal (CDR) solutions through 2030.

To reduce supply chain emissions, Salesforce has included a Sustainability Exhibit

in its procurement contract, requiring suppliers to take up a Science-Based target that aligns with the 1.5°C pathway.²¹ Further, Salesforce has been working extensively towards ecosystem restoration. One of the significant efforts is the One Trillion Tree initiative with 1t.org. Salesforce sets a goal to conserve and restore 100 million trees by 2030.

In 2021, Salesforce partnered with Accenture to support companies in New Zealand in embedding sustainability into their operations.²² In addition, Dentsu International leveraged their internal Salesforce practice (Davanti, a Merkle Company) to implement Net Zero Cloud to monitor its progress against targets in energy, building performance, waste management, and CO2 emissions in ten markets including New Zealand.

Net Zero Cloud 2.0

Salesforce's Net Zero Cloud 2.0 is a sustainability management solution that enables organisations to go net zero now. In this new era of climate accountability, organisations' carbon data will need to be as trusted as their financial data. Net Zero Cloud 2.0 has been completely rebuilt to offer trusted reporting, deeper insights, and supplier management.²³

With Net Zero Cloud 2.0, organisations can get sustainability insights with rich analytics dashboards, powered by Tableau, to achieve their climate goals and take action with:

- **Carbon Footprint Forecast:** Organisations can find the fastest path to net zero with a 'what-if' analysis to visualise progress and alignment to their climate action commitments.
- **Science-Based Targets:** Setting goals in line with science based targets and measuring progress.²⁴
- **Supplier Management:** Track scope 3 emissions across the entire value chain and help suppliers and distributors reduce emissions.
- **Waste Data Management:** Organisations can upload and track hazardous and non-hazardous waste management data and treatment methods like landfilled, composted, or combusted – all in one place.



4. Economic and Environmental Impact of Moving to the Cloud

Climate change impacts economic growth. Assessments suggest that New Zealand will lose 1.17 percent of gross domestic product (GDP) per capita by 2050 if global temperature rise stays below 2°C. However, in a scenario where emissions continue to increase, the loss in GDP per capita rises to 3.18 percent by 2050 and 13.15 percent by 2100.²⁵

According to the United Nations Intergovernmental Panel on Climate Change rising temperatures will see New Zealand divided by extreme weathers, with rains and floods in the southern and western parts of the country, and droughts and fires in the northern and eastern parts.²⁶ As a result, there will be a significant impact on New Zealand's primary industries, which function as the backbone of the country's economy, making up 1 in every 7 jobs.²⁷ Fishing, for example, will be affected as marine species may face extinction due to warming and acidifying seas. Elsewhere, heat and water stress will affect agriculture productivity, including the reproductive ability of animals.

Investments in cloud technologies to reduce emissions

Cloud computing offers long-term economic gains including greater flexibility, cost efficiency, speed, and business continuity. An often-overlooked advantage is its impact on the environment. It reduces energy consumption, waste, and carbon emissions.²⁸

A recent study by S&P Global Market Intelligence has shown significant energy savings of 79 percent from moving business applications and IT workloads from on-premises enterprise and public sector data centres to the cloud.²⁹ With data centre capacity expected to reach 2GW in New Zealand by 2030, there will be a substantial reduction in energy consumption and carbon emissions, as IT workloads are moved to the cloud. Based on these estimates, research from Access Partnership projects:

USD 91 million
cost savings in 2022 from
reduction in energy use*

0.4 million
Mt CO₂ emissions reduction in 2022
due to migration to cloud

17 million
Mt CO₂ emissions reduction
between 2022 – 2030
due to migration to cloud

USD 2 billion
cost savings between
2022 – 2030* from reduction
in energy use

0.5 million
Mt CO₂ emissions reduction in
2022 if cloud operators source
100 percent renewable power

21 million
Mt CO₂ emissions reduction
between 2022 – 2030 if
cloud operators source
100 percent renewable power

* Reduction in energy use due to higher server utilization rate, the deployment of highly energy-efficient servers as well as the use of advanced power distribution systems and cooling technology by cloud data centres.





21 million (Mt) emissions reduction would be equivalent of approximately:³⁰

- GHG emissions from 4.5 million passenger cars in New Zealand, or 84 billion kilometres driven on New Zealand's roads
- CO₂ emissions from consumption of 9 billion litres of petrol
- CO₂ emissions from 6 coal-fired plants in one year
- CO₂ emissions from consumption of 49 million barrels of oil
- CO₂ emissions from charging 2.6 trillion smartphones
- GHG emissions avoided by recycling 910 million trash bags of waste
- GHG emissions avoided by 5,700 wind turbines running for a year and
- Carbon sequestered by planting 350 million tree seedlings over 10 years*

* Detailed methodology and estimations are included in Appendix I



Salesforce is also encouraging other cloud companies and tenants of co-location facilities to maximise the use of renewable energy solutions and is a signatory of the 'Corporate Colocation and Cloud Buyers Principles' to aid sustainability efforts.³¹

Reducing emissions from data centres is a key part of the decarbonisation program at Salesforce.

It is addressing this by increasing the efficiency of software code, which helps achieve more with each kilowatt hour of energy it uses. As it operates in shared co-location facilities, it also works closely with data centre partners to ensure high-efficiency, water-free, and zero-waste infrastructure that reduces energy use and minimises cloud's carbon impact.



5. Business Sentiment in New Zealand on Sustainability

Salesforce commissioned YouGov to conduct a survey of 373 managers representing small, medium, and large businesses in New Zealand. Key findings included:



Support for net zero commitments and government incentives

New Zealand's decision to set a net zero emission target by 2050 has resonated well with business, with 72 percent of surveyed managers citing their support for it.³² Managers that strongly supported the country's net zero target were also more likely to agree that both businesses and government could do more to address climate change and achieve net zero targets. That said, 50 percent of the managers surveyed believe government should be doing more to address climate change and achieve a net zero by 2050. Seventy nine percent of managers surveyed support government providing subsidies and incentives to businesses for the development of renewable energy technology.

The sectors managers are most likely to list in the top three industries they think are doing the most to help meet and address a net zero target by 2050 are energy (43 percent), agriculture (35 percent) and government (32 percent).



Jobs growth opportunities

While most business managers surveyed indicated support for efforts to address climate change, there are different views on the economic impact of achieving net zero by 2050, especially on jobs growth. A majority of New Zealanders indicated that net zero targets would either not impact jobs or result in jobs growth, with 39 percent believing there would be no impact on jobs as any jobs lost would be balanced by the number of jobs created, and 28 percent believing that it will result in more jobs. On the other hand only 21 percent believed there would be less jobs, and 12 percent were unsure of the impact.

The 2022 New Zealand budget outlined the opportunities for a net zero economy including creating new industries and high-value jobs; lower household energy bills; a more climate-friendly agriculture sector; warmer, drier homes; exciting new technologies; the protection of native species and ecosystems; cost savings for businesses; and greater resilience in the face of increasing global uncertainty.³³

This highlights the need for government and business efforts to prioritise awareness building and understanding of the potential for new job creation in the transition to net zero, as well as the overall expected economic, environmental, and health benefits of a low-carbon, green economy.



Role of technology, business and suppliers

Seventy six percent of managers surveyed believe that technology will play an important role in helping achieve a net zero target by 2050 with 43 percent saying the role of technology will be very important.

Forty nine percent of the managers surveyed believe businesses in their industry should be doing more to address climate change and a net zero economy by 2050.

Fifty six percent of managers surveyed say if a supplying business had a net zero target, then it would make them more likely to purchase their products/services. Interestingly, managers from the public sector (70 percent) are more likely than those from the private sector (53 percent) to say if a supplying business had a net zero target, then it would make them more likely to purchase their products/services.





6. Recommendations

This section provides five key recommendations to advance New Zealand's efforts on addressing climate change.



Develop cutting-edge climate technology

New Zealand should support innovations that reduce emissions and increase energy efficiency. Further, it should promote startups, ecopreneurs, and partnerships, those who are working on innovative climate change initiatives. This was reflected in the survey with 76 percent of managers noting the importance of technology in achieving net zero targets.

These can be actionable in a variety of methods. Some businesses have venture arms and could dedicate a portion of their investments to ecopreneurs; governments could provide financial incentives for startups that seek to solve climate change initiatives.



Address sustainability skills gap

Organisations need to focus on creating a workforce equipped with skills to work in the field of climate change. Upskilling initiatives should prepare employees to understand the imperative for climate action and make decisions aligned with their organisational goals. These skills may involve environmental impact assessments, environmental, social and governance (ESG) ratings, sustainable product design, circular economy advisors, and environmental accounting experts. To address this demand, government and business should work together to address re-skilling and upskilling the workforce through investments in training and learning programmes.

In addition, organisations should have climate and sustainability training embedded internally because it can impact a variety of functions whether it be finance and risk; building management; branding; regulation; product; supplier management and so forth.



Use Environment AI

Environment AI means using AI to address environmental challenges. There are many potential uses of harnessing AI to achieve sustainability outcomes. Early-stage projects

already underway to support the environment, including to bolster biodiversity, reduce pollution, and protect marine resources.³⁴ Other potential uses of environment AI include smarter decision making for decarbonising industries and how to efficiently allocate renewable energy. Improvements in the availability and interoperability of data, will further support the application of AI across different sectors.

It's imperative for organisations to determine how this can be used and then leverage it.



Increase investment in cloud

The New Zealand government should encourage adoption of cloud computing considering its lower environmental impact. According to a study by Accenture, cloud migration enabled companies to achieve more than 84 percent reduction in carbon emissions compared to legacy infrastructure. Cloud adoption reduces energy consumption, waste generation, and carbon emissions. This report reveals that 0.4 million Mt CO₂ emissions reduction in 2022 can be achieved by migrating to the cloud, which rises to 0.5 million Mt CO₂ emissions reduction if the cloud operates fully rely on renewable power.



Adopt a shared digital platform to track emissions.

Government and organisations should adopt a shared digital platform to track emissions, and forecast emission patterns. Having a shared digital platform will ensure better decision making a single source of truth when measuring and tracking emissions within their own organisation and potentially their supply chain.

It's difficult and near impossible to improve something that you cannot measure, especially if it's not in a consistent standard. This requires agreed parameters of what is defined as emission reduction and net zero for organisations. Having a shared digital platform will help with transparency, and provide accurate data in a timely manner. In the short term, this could be piloted to specific sectors such as all government agencies, or sectors that have specific regulations and standards that need to adhere to such as financial services, and then can be rolled out nationally.

Appendix I. Methodology

Economic and Environmental Impact Moving to the Cloud

The modelling aims to examine the impact of cloud technologies and associated data centres on energy reductions and carbon emissions. It is based on estimates from a recent study by S&P Global Market Intelligence which shows significant energy savings, of 79 percent, from moving business applications and IT workloads from on-premises enterprise and public sector data centres to the cloud.³⁵

As the data centre capacity is expected to increase five times to 2GW in New Zealand by 2030, the model estimates a substantial reduction in energy consumption and carbon emissions, as IT workloads are moved to the cloud. In addition, when designing server and power distribution systems, cloud service providers (CSPs) invest in technologies to ensure a higher level of server utilisation and efficient resource allocation. As cooling systems of cloud facilities can account for up to 55 percent of a data centre’s energy consumption,³⁶ the use of advanced cooling systems, ventilation, and airflow management in cloud infrastructure will contribute to further energy reduction.

Based on this premise, the model provides annual estimates from 2022 to 2030 on:

- CO₂ emissions due to migration to cloud infrastructure;
- CO₂ emissions due to renewable energy use by cloud service providers; and
- Cost savings from reduction in energy use.

The estimates are based on the following assumptions and inputs:

- Data centre capacity in New Zealand has reached 370MW in 2021,³⁷ assuming 80 percent (296MW) was utilised;
- Data centre capacity in New Zealand is growing at a CAGR of 21 percent from 2022 to 2030;³⁸
- Reduction in CO₂ emissions (per MW per year (Mt)) totalled 2,389 and increased to 2,978 with 100 percent renewable energy.³⁹ It is assumed that all the extra data centre capacity will be taken up in the following years to calculate the maximum amount of CO₂ emissions per year;
- Electricity consumption in 2021 amounted to 39,551GWh⁴⁰ and electricity cost per kWh is USD 0.12,⁴¹ and
- Data centres are responsible for 2 percent of total electricity consumption in New Zealand⁴² and assume to increase 21 percent per year (2022 – 2030).

	2021 (Base)	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total (2022 - 2030)
Data centre capacity (MW)	370	448	542	655	793	960	1161	1405	1700	2057	9721
Reduction in CO ₂ emissions from efficiency (Mt)	176,786	362,411	587,018	858,792	1,187,638	1,585,543	2,067,007	2,649,579	3,354,490	4,207,434	16,859,912
Reduction of CO ₂ emissions from the use of renewable energy (Mt)	220,372	451,763	731,745	1,070,524	1,480,447	1,976,453	2,576,621	3,302,824	4,181,529	5,244,762	21,016,667
New Zealand data centre electricity consumption (GWh)	791	957	1158	1401	1696	2052	2483	3004	3635	4398	20,783
Cost savings due to energy reduction (USD)	74,988,696	90,736,322	109,790,950	132,847,049	160,744,930	194,501,365	235,346,651	284,769,448	344,571,032	416,930,949	1,970,238,697

Source: Access Partnership Research

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