



**LINCOLN**  
**UNIVERSITY**  
TE WHARE WĀNAKA O AORAKI

# Lincoln University

## Sustainability Plan





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UNIVERSITY

TE WHARE WĀNAKA O AORAKI

**Ka tipu, ka rea, ka whanake  
ake te rākau mātauraka**

**Ko tōna pakiaka,  
he waewae haere**

**Ko tōna kaupapa,  
he takata ora**

**Nau mai, ki Te Whare  
Wānaka o Aoraki**

*Plant, nurture and grow the tree of knowledge  
Whose roots allow it to move freely  
Whose purpose is to support healthy people*



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# Lincoln University Sustainability Plan



## Vision

Lincoln University is committed to being an exemplar of sustainable practices for the land-based sector, and the ecosystems within it.



## Purpose

Be sustainability leaders in education and research via a demonstration of sustainability impacting sectors we support.



## Aligned to the Lincoln University Strategy 2019–2028

### Goal 1

To be sector leaders in education, research and demonstration of sustainability

### Goal 2

To become carbon neutral by 2030, and carbon zero by 2050



### Following four themes

Education Research Demonstration Campus Environment



### Guided by 5 principles

- Principle 1** Alignment with the Sustainable Development Goals (SDGs)
- Principle 2** Sector Leaders in Sustainability
- Principle 3** Self Sustainable
- Principle 4** Becoming carbon neutral
- Principle 5** Value of Mātauraka Māori

# Vision and purpose



**Lincoln University is committed to making a positive impact through outstanding exemplar environmental sustainability performance.**

Sustainability at Lincoln means meeting our current needs without compromising the needs of our future generations. This includes social equity and economic development with a strong focus on land-based functions.

Land-based sustainability means practices and technologies that aim to integrate the management of land, water, biodiversity and other environmental resources to meet human demand while ensuring the long-term sustainability of ecosystem services through the enhancement of diversity and resilience.

We are committed to being an exemplar of sustainable practices for the land-based sector, and the ecosystems within it by:

- Adding value from distinctive and dedicated teaching to improving sustainability in the land-based sector

- Improving the sustainability of the land-based sector from our distinctive and excellent research
- Demonstrating our best practice on sustainability challenges
- Making a difference through a climate action focus in our campus environment.

We will become leaders in education, research and demonstration of sustainability. Lincoln University will have a significant positive impact on the sectors we support while concurrently becoming a carbon-neutral institution by 2030 and carbon zero by 2050.



Solar panels on Te Kete Ika are part of the Energy focus of diversifying through renewable energy sources

# Aligned to the Lincoln University Strategy 2019–2028



The Sustainability Plan is closely aligned to the University Strategy 2019-2028, and supporting the Research, Education, Māori, and Partnerships plans.

## Alignment to:

### Goal 1

To be sector leaders in education, research and demonstration of sustainability

### Goal 2

To become carbon neutral by 2030, and carbon zero by 2050

## Following four themes

**Education.** Lincoln University will add value to Aotearoa New Zealand through innovative sustainable teaching practices and content directed towards improving the sustainability of the land-based sector.

**Research.** Lincoln University will show global leadership in distinctive and excellent research dedicated to improving the sustainability of the land-based sector. We will champion sustainability in the conduct of our research.

**Demonstration.** Our farms are central to how Lincoln University has an impact on sustainability challenges. We are committed to utilising our farms for knowledge sharing and solving global sustainability issues. Our demonstration farms will display leadership in the sector and contribute to solving sustainability challenges in the land-based sector.

**Campus Environment.** Lincoln University will demonstrate how to be a world leader in operating sustainably through “practising what we preach” and “cleaning up our backyard” and ensuring we have a sustainable campus environment.



# Guided by 5 Principles



**In developing the plan we have looked at these five principles.**

- 1** Alignment with the Sustainable Development Goals (SDGs). While the relevant goals are linked to the plan, all SDGs are important and underpin the Sustainability Plan
- 2** Sector Leaders in Sustainability. By “practising what we preach” and “cleaning up our backyard” we are ensuring we have a sustainable campus environment, and further demonstrate how to be a world leader in operating sustainably.
- 3** Self-Sustainable. The University will fund the base costs associated with carrying out this plan, i.e. infrastructure, people, and the carbon audit. A Sustainability Fund will be established to fund educational activities and initiatives.
- 4** Becoming carbon-neutral/ carbon zero. Progress will be tracked through the Toitu Envirocare carbon audit which will provide ongoing progress reporting against the baseline. The first goal is to become carbon neutral by 2030, then progress to carbon zero by 2050.
- 5** Value of Mātauraka Māori. Encompassing the Lincoln University values of Manaakitaka – looking after people and being at the heart of everything we do. Throughout this Plan, the values and integrity of Mātauraka Māori will be upheld.





# Governance and Reporting of Core KPI's



The plan will be managed by the Sustainability Taskforce which will report through to the Vice-Chancellor and the He Toki Tārai, Committee of Council. Formal reporting will occur 6-monthly from the chair of the taskforce to the Vice-Chancellor and the He Toki Tārai Committee of Council.

Core Key Performance Indicators are:

Goal	Focus Area	KPI	Measurement
<b>Goal 1</b> Be Sector Leaders in education, research and demonstration of sustainability	Education	Graduate attributes are revised to include specific reference to sustainability	Annual student engagement survey
	Research	Set up two living laboratory projects on Lincoln University campus involving sustainability	Annual Sustainability Report
	Demonstration	Establish Lincoln University Multi-Crop Energy Farm	Annual Sustainability Report
<b>Goal 2</b> Become carbon neutral by 2030 and carbon zero by 2050	Green Infrastructure	Baseline metrics and sustainability data schema compiled (Toitu)	Carbon audit
	Energy	Decommission the coal boiler by 2024	Campus Development dashboard and quarterly Sustainability Report
	Water & Biodiversity	Overall improvement in GreenMetric ranking for Water	Water conservation, recycling and water-efficient appliance metrics in annual GreenMetric Report
	Mobility	Overall improvement in GreenMetric ranking for Transport	A 5% annual reduction in carbon emissions from 2022 onwards
	Waste	Overall improvement in GreenMetric ranking for Waste	Recycling, toxic, organic and inorganic waste metrics in annual GreenMetric Report

# Sustainability Plan on a Page

## What do we want to achieve?

### Goal 1

Be sector leaders in education, research and demonstration of sustainability

Linked to the Strategy Goals: Renewal

### Through what Focus Areas will we achieve this?

#### Education

#### Research

#### Demonstration

### How will we achieve this?

Develop and implement procedures for operation and conduct of teaching that meets sustainability priorities.

Prioritise and resource training and professional development to implement innovative sustainable teaching methods.

Update the university graduate attributes to include sustainability, and demonstrate how academic programmes contribute to UN SDGs.

Campus and farms will be used to develop teaching resources relevant to national, global and sustainability challenges, linked to the Lincoln University Living Laboratory programme.

Resource and prioritise excellent multi-disciplinary research that helps solve national and global scale challenges for sustainability.

Ensure Lincoln University staff, students and stakeholders know the impact and value of their sustainability research.

Campus and farms will be used as sites to develop research solutions for national, global and sustainability challenges, linked to the Lincoln University Living Laboratory programme.

Develop and implement procedures for operation and conduct of research that meets sustainability priorities.

Establish the Lincoln University Multi-Crop Energy Farm to provide a working solution for small-medium enterprises in primary industry.

Demonstrate on the Lincoln University Demonstration Farm a farm system that by 2030 has a higher profitability and lower environmental footprint than all competing land uses in the irrigated Canterbury environment.

Campus and farms will be used as sites for students and staff to develop solutions to national and sustainability challenges faced by the land-based sector.





## Goal 2

Become carbon neutral by 2030 and carbon zero by 2050

Goals 1, 2, 3 and Shaping Goals 4, 5, 6

### Through what Focus Areas will we achieve this?

## Campus Environment

### How will we achieve this?

Green Infrastructure	Energy	Water & Biodiversity	Mobility	Waste
<p>Establish baseline metrics for buildings and infrastructure.</p> <hr/> <p>Review and replace fossil fuel systems.</p> <hr/> <p>Re-baseline and benchmark against TEFMA sustainability criteria.</p> <hr/> <p>Establish and prioritise 'whole of life' cost.</p> <hr/> <p>Implement a new Asset Management system.</p>	<p>Behaviour and Culture Change.</p> <hr/> <p>Energy load reduction.</p> <hr/> <p>Diversify energy sources through renewable energy.</p> <hr/> <p>Adopt new energy management technology.</p> <hr/> <p>Decommission the coal boiler.</p> <hr/> <p>Assess a certified renewable energy source.</p> <hr/> <p>Remove end of life buildings.</p>	<p>Install water sub-metering to improve water usage monitoring and management.</p> <hr/> <p>Adopt retention pond solutions for storm water and rainwater harvesting.</p> <hr/> <p>Include water conservation and biodiversity solutions in Landscape Master Planning.</p> <hr/> <p>Specification of water efficient building services components.</p> <hr/> <p>Behaviour and Culture Change.</p>	<p>Increase digital-enabled technology for meetings/conferences.</p> <hr/> <p>Increase carpooling, bus and electric vehicle use and more cycling.</p> <hr/> <p>Introduce a carbon offset charge for all university travel.</p> <hr/> <p>Change university fleet to 100% carbon zero vehicles where able.</p> <hr/> <p>Establish a solution for more sustainable field trips.</p> <hr/> <p>Introduce a voluntary carpark charge.</p> <hr/> <p>Review Flexible Work policy.</p>	<p>Consistent categories of waste across campus.</p> <hr/> <p>Education of proper disposal of waste variants.</p> <hr/> <p>Sustainable procurement purchasing for all goods and services.</p> <hr/> <p>Remove plastic packaging from all university products by 2023.</p> <hr/> <p>Behaviour and culture change through education and appointing waste champions.</p>



# Sustainability Goal 1

## Education

**Add value to Aotearoa New Zealand through innovative sustainable teaching practices and content directed towards improving the sustainability of the land-based sector.**



### Guiding Principle

Sustainability principles are embedded into all teaching and learning activities at Lincoln University. Lincoln staff and students will know how their knowledge, skills and values impact sustainability best practices.

### How we will achieve this

#### Actions

- Develop and implement procedures for operation and conduct of teaching and learning that meet university sustainability priorities, including carbon neutrality, maximising resource efficiency and minimising wastage and pollution
- Prioritise and resource training and professional development to ensure that academic staff have the skills, knowledge and abilities to implement innovative sustainable teaching methods
- Update all graduate profiles to include sustainability, specifically demonstrating how academic programmes contribute to the development and implementation of UN Sustainable Development Goals, and to producing leaders in areas of sustainability
- Use the Lincoln University Campus and farms as sites for students and staff to develop teaching resources relevant to national and global sustainability challenges, linked to the Lincoln's Living Laboratory programme.

### Progress Indicators

	Procedures for sustainable teaching operation implemented and monitored, and mechanisms for tracking progress are operational by the end of 2021
	Graduate attributes updated to include specific reference to sustainability - by the end of 2022
	Ongoing increased number of staff participating in professional development opportunities related to sustainability
	At least two living laboratory sustainability teaching projects per annum on Lincoln University campus and farms
	Ongoing improvement in Times Higher Education Impact Ranking Score, Sustainability Goals



# Sustainability Goal 1

## ► Research

**Show global leadership in distinctive and excellent research dedicated to improving the sustainability of the land-based sector. We will champion sustainability in the conduct of our research.**



### Guiding Principle

We will empower research consistent with national sustainability policies and UN Sustainability Development Goals. We will work to transform our research into impacts that enable sustainability and intergenerational wellbeing. The value of our research to sustainability will be apparent to staff, students and key stakeholders.

### How we will achieve this

#### Actions

- Resource and prioritise excellent multi-disciplinary research that helps solve national and global scale challenges for sustainability including water quality, climate adaptation and mitigation, greenhouse gas emissions, and enhancement of biodiversity.
- Ensure university staff, students and stakeholders know the impact and value of their sustainability research.
- Use the Lincoln University campus and farms as sites for students and staff to develop research solutions to national and global and sustainability challenges, linked to the university Living Laboratory programme.
- Develop and implement procedures for operation and conduct of research that meets sustainability priorities, including minimising wastage, improving water use contamination-free, carbon neutrality and travel.

### Progress Indicators

	One multidisciplinary sustainability research project resourced by Lincoln University each year
	One detailed case study of the impact of Lincoln research on sustainability developed each year
	Procedures for sustainable research operation implemented and monitored, and mechanisms for tracking progress are operational by the end of 2021 and ongoing
	Two living laboratory projects on Lincoln University campus involving sustainability each year
	Improvement in GreenMetric for research annually

# Sustainability Goal 1

## ▶ Demonstration

**Our farms are central to the impact Lincoln University has on sustainability challenges. We are committed to utilising our farms for knowledge sharing and solving global sustainability issues. Our demonstration farms will display leadership in the sector and contribute to solving sustainability challenges in the land-based sector.**



### Guiding Principle

Using an evidence-based approach guided by research we will work with partners to demonstrate to the agri-food and fibre sector high-value farm systems that are leading exemplars of carbon neutrality, predator-free, enhanced native biodiversity, and improved water use efficiency.

### How we will achieve this

#### Actions

- Establish the Lincoln University Multi-Crop Energy Farm with a purpose to provide a working solution for small-medium enterprises in the primary industry to transition carbon-neutral economy.
- Develop, transition to, and demonstrate on the Lincoln University Demonstration Farm (LUDF) a farm system that by 2030 has a higher profitability and lower environmental footprint (nitrate N loss, greenhouse gases) than all competing land uses in the irrigated Canterbury environment. The farm system will be an exemplar of a New Zealand form of a modern farming system, based within a Te Taiao framework.
- Use the Lincoln University farms as sites for students and staff to develop solutions to national and sustainability challenges faced by the land-based sector, such as business and environmental sustainability, linked to the university Living Laboratory programme.

### Progress Indicators



Two living laboratory projects conducted on Lincoln University farms each year to develop and demonstrate the sustainability of Lincoln University farms - ongoing



Lincoln University Multi-Crop Energy Farm established



Demonstrated uptake of practices to improve sustainability as implemented by LUDF - ongoing



# Sustainability Goal 2

## ▶ Campus Environment – Green Infrastructure

All new teaching, research and education facilities to be built to Level 4 green star standard, rated by New Zealand Green Building Council as “Best Practice”, and all retrofit buildings to follow Campus Development Programme sustainability checklists and ‘whole-of-life’ costing principles.



### Guiding Principle

To ensure Lincoln will use environmentally sustainable design principles wherever possible on all building projects.

### How we will achieve this

#### Actions

- Establish baseline ‘costs-in-use’ metrics for existing campus buildings and infrastructure from a carbon audit
- Review and replace fossil fuel systems for more efficient heating (including solar)
- Benchmark against Tertiary Education Facilities Management Association (TEFMA) sustainability criteria
- Establish and prioritise whole-of-life cost for our buildings in addition to capital cost
- Implement a new Asset Management system (including sustainability data).

### Progress Indicators

	Sustainability criteria included in Capital Prioritisation Matrix - completed early 2022
	Baseline metrics and sustainability data schema compiled (Toitu audit complete) by Q3 2021
	Costs-in-use targets established for whole campus by Q4 2021
	Quarterly reporting against TEFMA benchmarks including space utilisation
	Whole of life estimates for all new buildings adopted as baselines for campus development projects - completed 2020
	Quarterly reporting on costs-in-use and deferred maintenance/backlog maintenance reduction

# Sustainability Goal 2

## ▶ Campus Environment – Energy

The Heating Infrastructure and Plant Decarbonisation Plan, within the Campus Development Programme, supports the goal to have **100% renewable energy by 2030.**



### Guiding Principle

To ensure that Lincoln removes or significantly reduces any high carbon emission assets on campus, allowing the university to take a significant first step to carbon neutrality, and resetting its sustainability credentials. This allows for infrastructure to better lever future energy technologies such as solar, wind, battery, gasifier, anaerobic digestion and other circularly sustainable innovations, enabling the decommissioning of the coal boiler.

### How we will achieve this

#### Actions

- Behaviour and culture change to drive more efficient use of energy
- Energy load reduction through more efficient and new infrastructure
- Diversify energy sources through renewable energy
- Adopt new technology to enable better management and use of energy
- Decommission coal boiler
- Assess a certified renewable energy solution by end of 2022
- Remove the 'end of life buildings' to save energy / reduce wasted energy.

### Progress Indicators

	Quarterly reporting on energy creation on campus from renewable energy sources
	Ongoing increase in the overall percentage of renewable energy consumed
	Ongoing reduction in energy consumed per user
	Ongoing improvement in GreenMetric ranking for energy
	Increase user awareness and behaviour through displaying metrics of energy used in buildings and creating competitions between occupants by 2022
	Coal boiler decommissioned by 2024
	Diesel generators decommissioned by 2030

# Sustainability Goal 2

## ▶ Campus Environment – Water and Biodiversity

**Conserving water and native (or indigenous) biodiversity will be key design consideration on all our capital infrastructure projects.**



### Guiding Principle

As outlined in the Landscape Masterplan we will identify opportunities to create and to strengthen and connect areas of existing native planting. We will identify new wetland opportunities and sustainable drainage to filter runoff.

### How we will achieve this

#### Actions

- Installing water sub-metering on major projects to improve water usage monitoring and management operationally
- Adopt retention pond solutions for stormwater and rainwater harvesting (greywater plumbing systems) techniques where appropriate
- The Landscape Masterplan and associated projects must include water conservation and biodiversity solutions to enhance native biodiversity
- Specification of water-efficient building services components
- Behaviour and culture change to drive decision making and user operation including communications and change management processes.

### Progress Indicators

	Landscape Masterplan completed, and projects prioritised by Q4 2021
	Arboretum project completed by the end of 2021
	Tree planting initiative scoped and implemented by the end of 2021
	Baseline metrics for water usage in new buildings established from metering and quarterly reporting every quarter
	Ongoing improvement in GreenMetric ranking for water and biodiversity

# Sustainability Goal 2

## ▶ Campus Environment – Mobility

The university will work with ECan and other partners to increase the effectiveness of public transport to and from campus, with a goal of reducing travel-related carbon emissions of 20% by end 2021, and 5-10% per year afterwards.



### Guiding Principle

Reduce the carbon emissions on all university travel from the 2019 baseline.

### How we will achieve this

#### Actions

- Introduce a carbon offset charge for all university air travel
- Increase digital-enabled technology for meetings/conferences
- Increase carpooling through carpool/share app  
Increase bus use through better routes and times
- Change university fleet to 100% carbon zero vehicles, as soon as suitable carbon zero vehicles are available in NZ i.e. farm vehicles.
- Introduce a voluntary carpark charge
- Encourage the use of electric vehicles to and from campus (staff and students)
- Establish a solution for field trips that focuses on electric or low carbon emission vehicles
- Review Flexible Work policy and procedure to remove barriers
- Increase and encourage more cycling (safety, covered sheds, showers, bike share, e-bike deals) (work with Council).

### Progress Indicators

	Air tax implemented by Q1 2022
	University fleet transfer to 100% carbon zero vehicles where required, on target and to plan by the end of 2024
	Introduction of a carpool app by Q1 2022.
	Premium parks for electric vehicles provided by Q1 2022
	Put in place a solution for field trips to have access to carbon zero vehicles by Q4 2021
	Installation of secure bike storage on campus by Q3 2021
	Ongoing improvement in GreenMetric ranking for transport
	Ongoing regular survey of staff and students on transport habits



# Sustainability Goal 2

## ▶ Campus Environment – Waste

**By introducing a circular economy approach into all university operations, we will work to reduce campus waste where possible and remove single-use plastic and oil-based packaging from the university.**



### Guiding Principle

A higher focus will be on reducing and reusing waste through a circular economy to enable the elimination of overall waste.

### How we will achieve this

#### Actions

- Establish and provide consistent categories of waste across campus including waste from laboratories and green waste
- Education on proper disposal of waste variants
- Review sustainable procurement purchasing for all goods and services throughout the university, focusing on minimising packaging
- Remove single-use and oil-based plastic packaging from products and goods supplied by the university
- Implement waste education into all accommodation students on campus
- Appoint waste champions amongst both staff and students to educate and promote effective waste management
- Ensure all waste is disposed of in an environmentally appropriate way.

### Progress Indicators

	Change Management and Communications Plan for staff behaviour and culture by Q2 2022
	All marketing material is sustainable by Q2 2022
	Ongoing improvement in GreenMetric ranking for waste
	Reduction of food waste by 75% by Q4 2023
	All recycling bins are labelled consistently and clearly (obvious) by the end of 2021
	Residential Assistant and student accommodation training programme in place by Q1 2022
	Targets for contamination of waste in place and reviewed on an annual basis by Q1 2022
	Student education waste programme in place through champions by Q1 2022



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