



Charles Sturt
University

Opportunities for Research Collaboration

Professor Michael Friend

Pro Vice Chancellor (Research and Innovation)

*'Yindyamarra Winhanganha' - The wisdom of respectfully
knowing how to live well in a world worth living in*



CSU locations

ORANGE 
 A VIBRANT COUNTRY TOWN WITH
 A GREAT FOOD SCENE



BATHURST 
 A FAST-GROWING
 REGIONAL HUB



PORT MACQUARIE 
 ENJOY COASTAL LIFE WHILE YOU STUDY



WAGGA WAGGA 
 THE BIGGEST INLAND CITY
 IN NEW SOUTH WALES



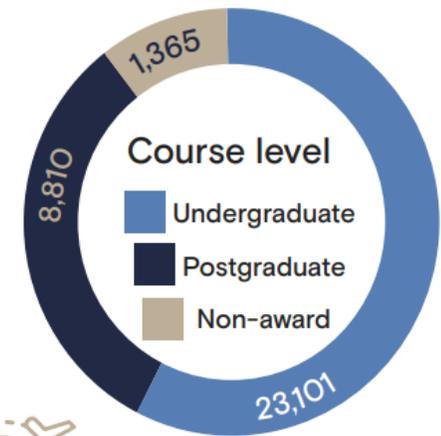
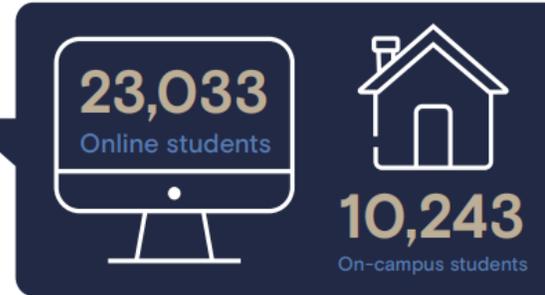
ALBURY-WODONGA 
 GO GREEN AND REDUCE YOUR
 CARBON FOOTPRINT WHILE YOU STUDY




Charles Sturt At a glance



33,276
Current students

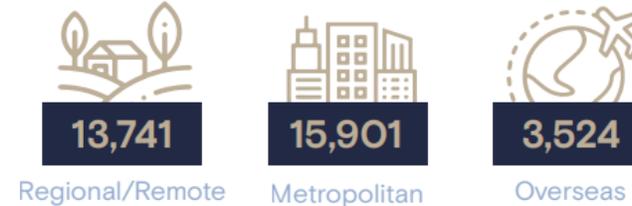


1,928
Full-time equivalent staff



3,171
Graduates

Students by region



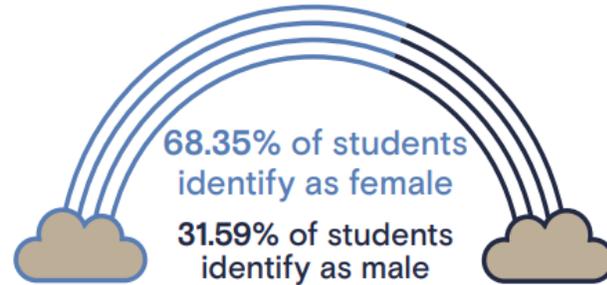
Female leadership

Chancellor

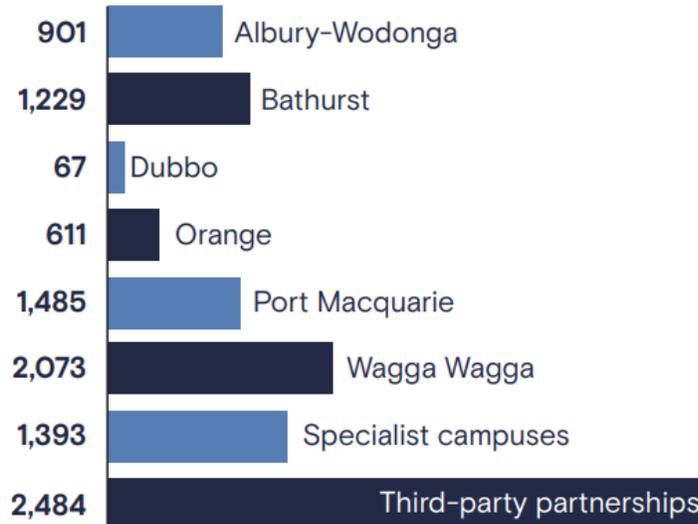
Deputy Chancellor

Vice-Chancellor

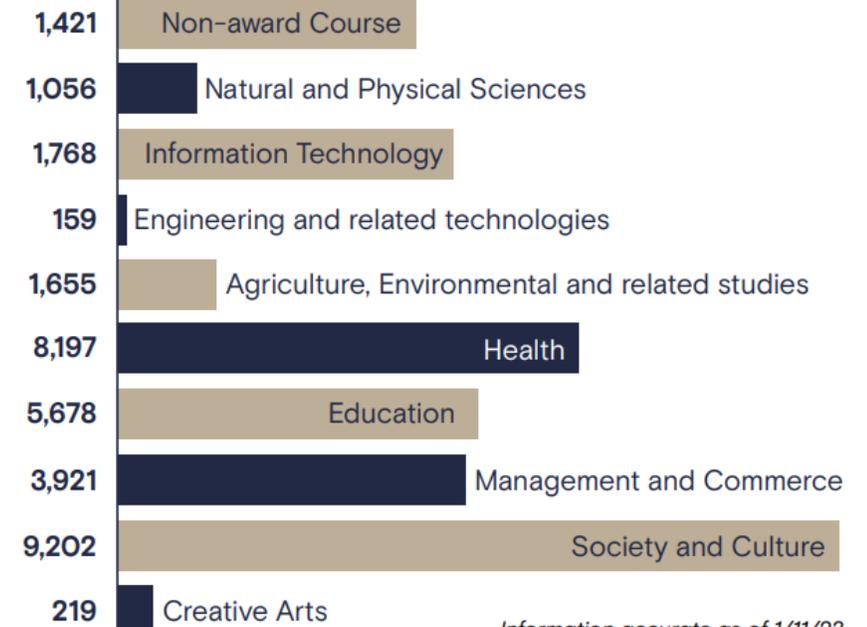
Chair of Academic Senate



Students by campus



Courses by field of education



Student equity groups



3.6%

First Nations
Australians



18.3%

Low Socioeconomic
Status (SES)



CLEAN WATER AND SANITATION

QUALIFYING SDG - 26% OF OVERALL

SCORE RANK
78.3 **38** out of 702 institutions



LIFE ON LAND

QUALIFYING SDG - 26% OF OVERALL

SCORE RANK
83.3 **=39** out of 586 institutions



GENDER EQUALITY

QUALIFYING SDG - 26% OF OVERALL

SCORE RANK
71.9 **37** out of 1081 institutions



CLIMATE ACTION

SCORE RANK
69.1 **82** out of 735 institutions



PARTNERSHIP FOR THE GOALS

MANDATORY QUALIFYING SDG - 22% OF OVERALL

SCORE RANK
94.6 **23** out of 1625 institutions



Research focus

We collaborate with our partners on research with impact.



Gulbali Institute
Agriculture, water
and environment
research



**Rural Health
Research
Institute**



**Artificial
Intelligence and
Cyber Futures
Research Institute**



**Faculty Research
Centres and
Groups**

One-CSU strategies around some key research themes:

- Renewables
- Biosecurity
- Circular Economy
- Wine

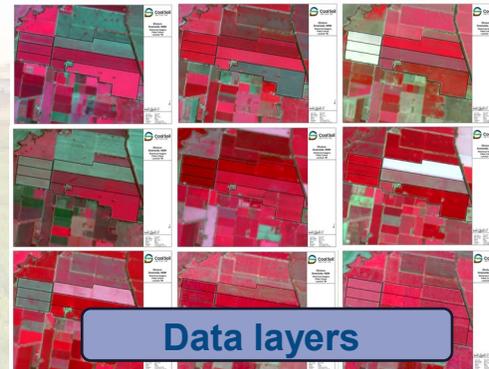
Global Digital Farm (1600ha, \$22m investment)



Satellites



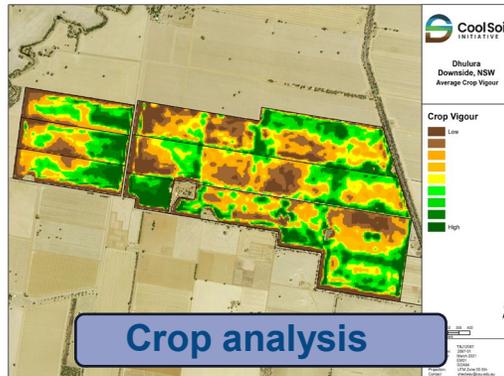
Viticulture



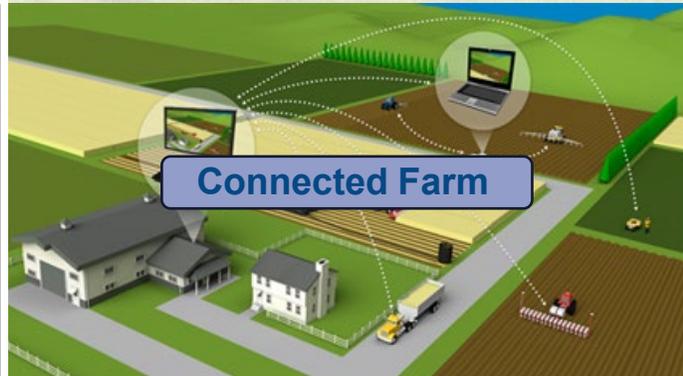
Data layers



Sensor network



Crop analysis



Connected Farm



Automation & robotics



Equipment



Soil sensing



Decision support

New!!
Global
Smart Farm
Network

Renewables in Agriculture Centre of Excellence

Empowering sustainable and productive regions through agriculture-focussed renewable energy research, innovation, demonstration and capacity building



Try, test and learn

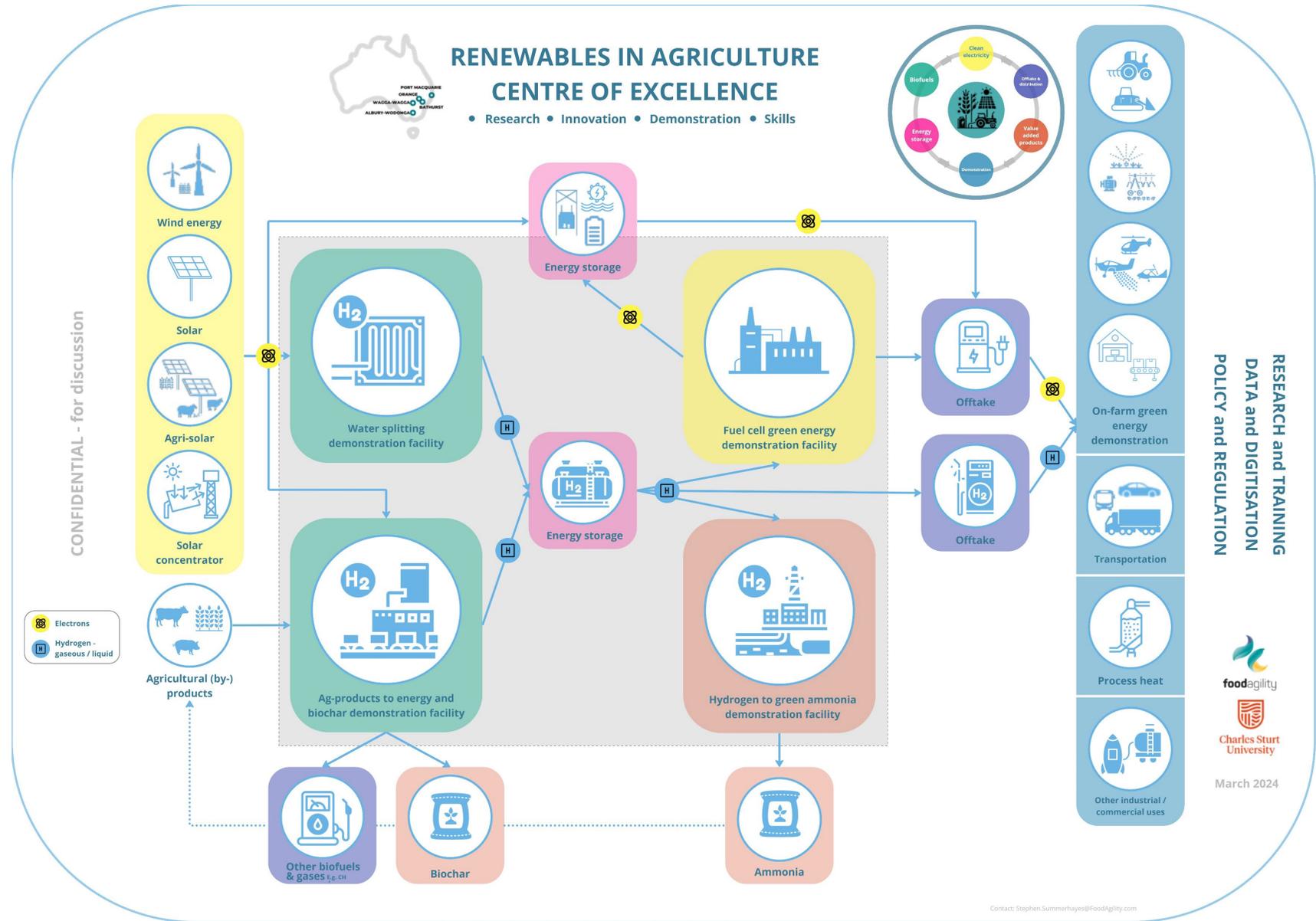


Thinking Bigger

We need an interconnected approach.

This is how that might look...

Partnerships will be critical



Example project: *A paddock to product partnership*



Delivering GHG emissions & scope 3 reporting in the Australian grain supply chain & supporting climate smart practices since 2017

Foundation members



MARS

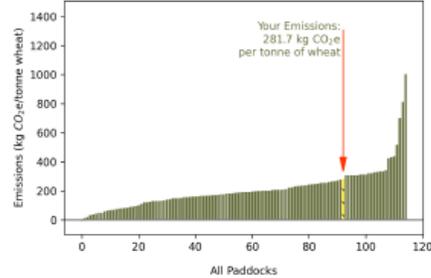
Kellanova



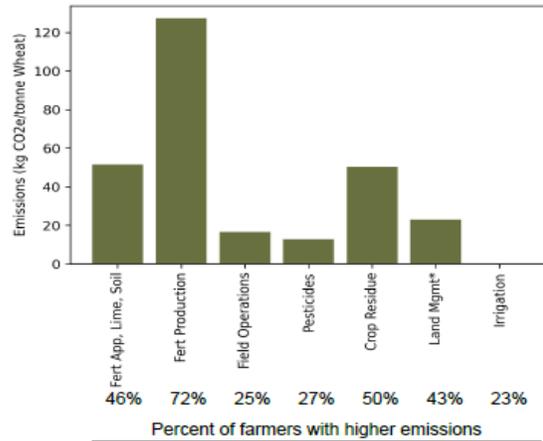
Farm Statistics

Area: 51 hectares
Soil Type: silt (medium)
pH (water): 5.5 < pH <= 7.3
Drainage: good
Organic Carbon: 1.60 %
Weight of Product: 193.8 tonnes
Territory: New South Wales
Total Net Emissions: 54,602 kg CO₂e

Emissions Intensity (per tonne)



Your Sources of Emissions

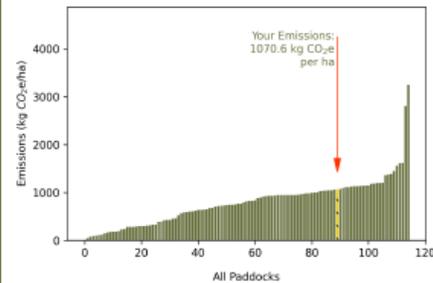


Fertiliser..... MAP (11% N) (50 kg/ha)
Urea - 46% N (230 kg/ha)
Crop Residue..... Left in field or mulched
Field Operations..... 19 litres diesel/ha used
Pesticides..... 11.0 actives applied

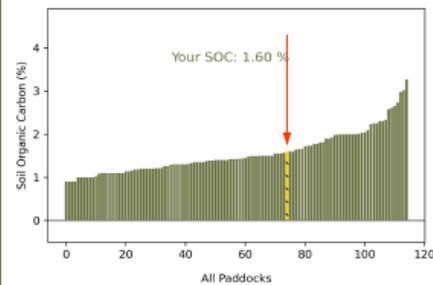
***Land Management Changes**

Tillage..... None
Land Use..... None
Cover Cropping/Pasture... medium biomass input > high biomass input

Emissions Intensity (per ha)



Organic Matter (%)



Cool Soils initiative

Every farmer receives a benchmarked report showing:

- Sources of emissions
 - % farmers with higher emissions
- Emissions intensity (per tonne)
 - For commodity reporting
- Emissions intensity (per ha)
 - For farm input assessment
- Organic matter – SOC% values
- Summary of practices / land management

Cool Soil Initiative in 2023: **Impact** By the Numbers

WHEAT DATA FOR CROP SOWN IN 2022 (unless otherwise noted)



kg CO2e /
tonne wheat

215

Emissions Intensity
(Land management
excluded)



kg CO2e /
tonne wheat

-31

Emissions Trendline
2017-2022



legume hectares
2017-2022

+50%
+35%

Increase in legume ha
Increase in lime incorporation
(respectively)



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Gracias!



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