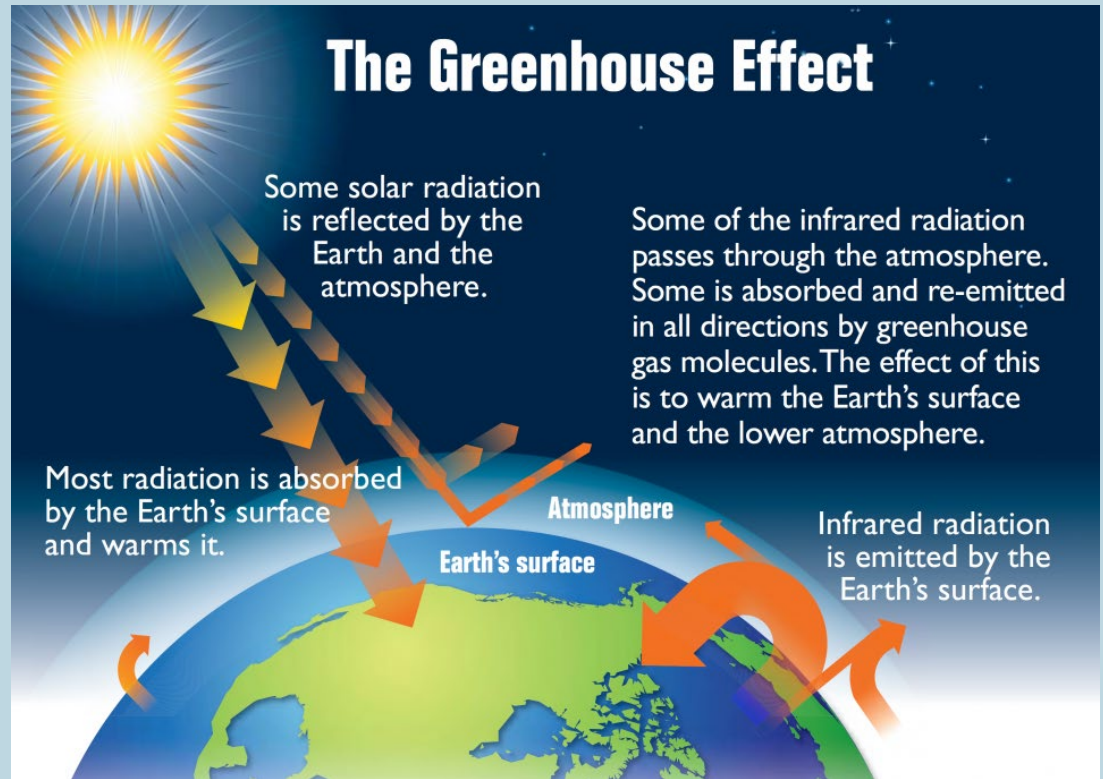




**CLIMATE CHANGE AND
CO2 NEUTRALITY IS A
BUSINESS PROBLEM:
ARE YOU READY?**

So Why Should We Worry about Carbon ?

- <https://www.epa.gov/climatechange-science/basics-climate-change>



Do you know the average amount CO₂ Emission per person?

Australia CO₂	Per Capita Emissions	15 tons
World Average CO₂	Per Capita Emissions	7 tons
Target goal by 2050 of CO₂	Per Capita Emissions	2 tons



How long does carbon stay in the atmosphere?

- **Answer**

- Between 300 to 1,000 years
- Once it's added to the atmosphere, it hangs around, for a long time: between 300 to 1,000 years. Thus, as humans change the atmosphere by emitting carbon dioxide, those changes will endure on the timescale of many human lives.
9 Oct 2019
- The Atmosphere: Getting a Handle on Carbon Dioxide <https://climate.nasa.gov> ›



**Working Together
Towards a Sustainable
Future...**



Amazon rainforest now emitting more CO₂ than it absorbs!

➔ The study found **fires produced about 1.5bn tones of CO₂ a year**, with forest growth **removing 0.5bn tones**.

The 1bn tones left in the atmosphere is equivalent to the annual emissions of Japan.

➔ Most of the emissions are caused by fires, many deliberately set to **clear land for beef and soy production**.

➔ Even without fires, hotter temperatures and droughts mean the south-eastern **Amazon has become a source of CO₂**, rather than a sink.

**“Australia flood,
boosted by climate
change, making history
in Sydney**

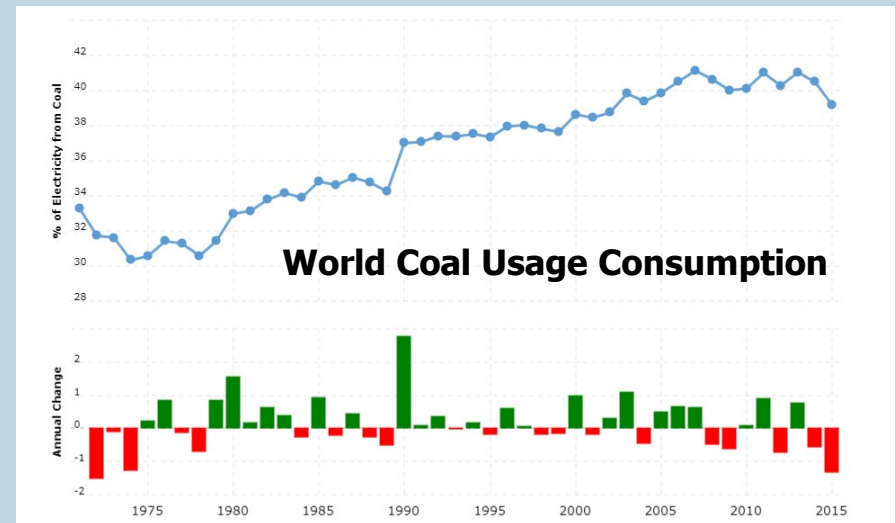
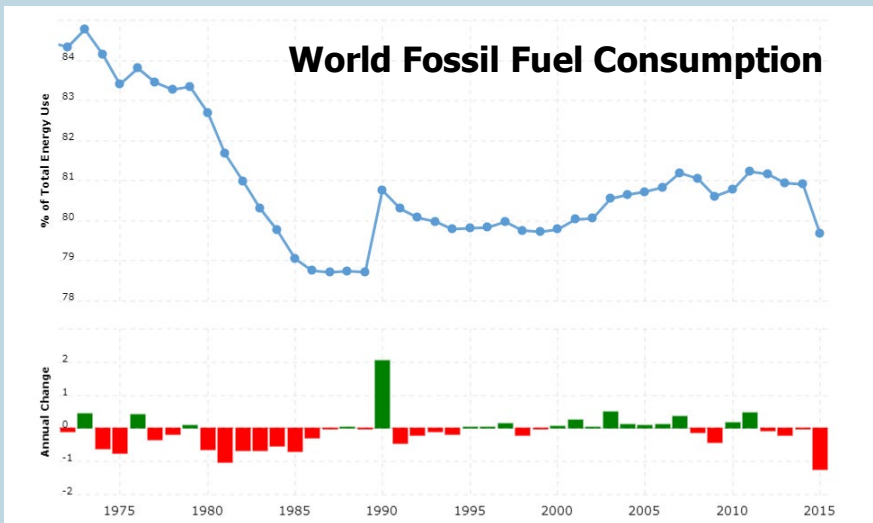
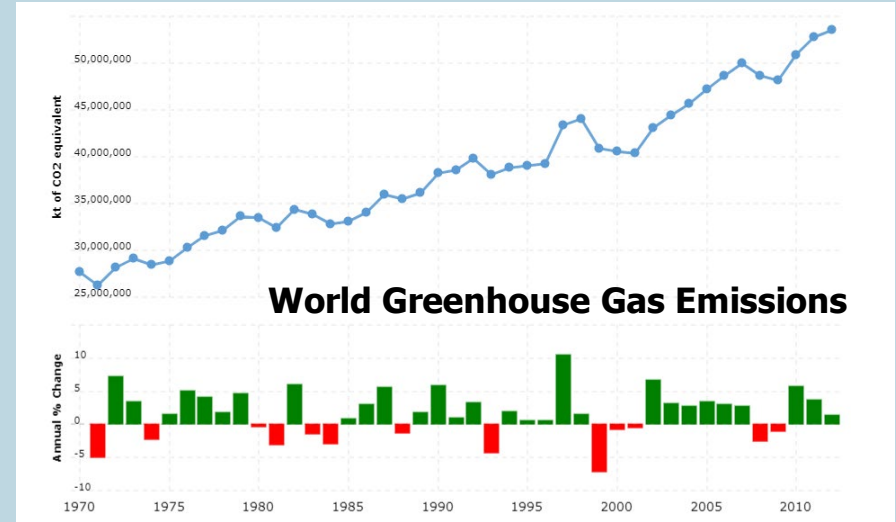
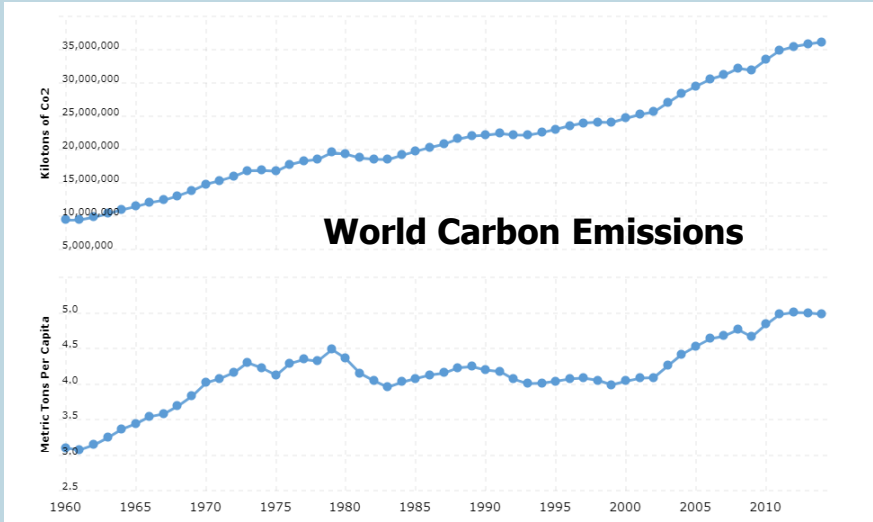
**The city is experiencing
its wettest year on
record after 8 inches of
rain in recent days”**

**By Kasha Patel and
Jason Samenow**

**|Published July 5, 2022
at 5:38 p.m.**



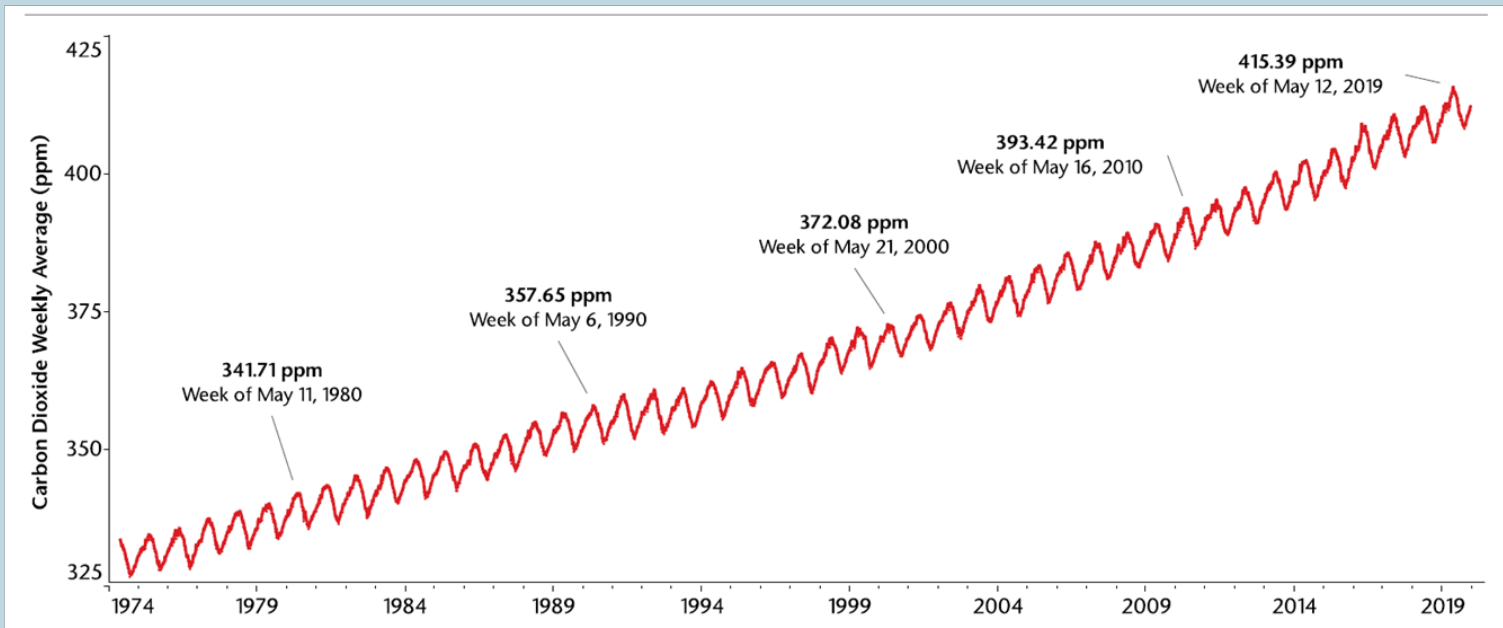
World Stats – Environmental Related



Global Carbon Dioxide

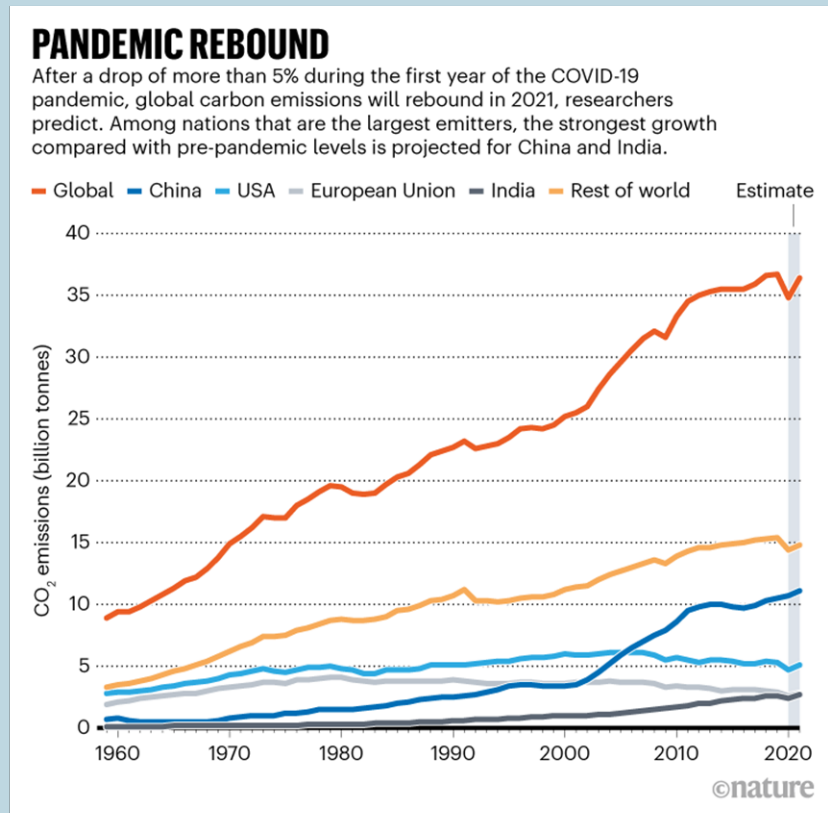
According to the data provided by the National Oceanic and Atmospheric Administration's (NOAA) Earth System Research Laboratory (ESRL), global carbon dioxide (CO₂) levels averaged more than **415** Parts Per Million (PPM) for the first time in the modern record in 2019. Similarly, the concentrations did not fall below 408 ppm in any month for the first time, again, in the modern record.

Atmospheric CO₂ levels have a scientifically-proven correlation with global temperature, supported by data from ice cores and the geological record.



Source: AON 2019 Annual Report, Weather, Climate & Catastrophe Insight https://www.aon.com/global-weather-catastrophe-natural-disasters-costs-climate-change-2019-annual-report/index.html?utm_source=regionemeauk&utm_campaign=natcat20

Post COVID-19 Pandemic CO2 Rebound



Source: Global Carbon Project <https://doi.org/10.1038/d41586-021-03036-x>

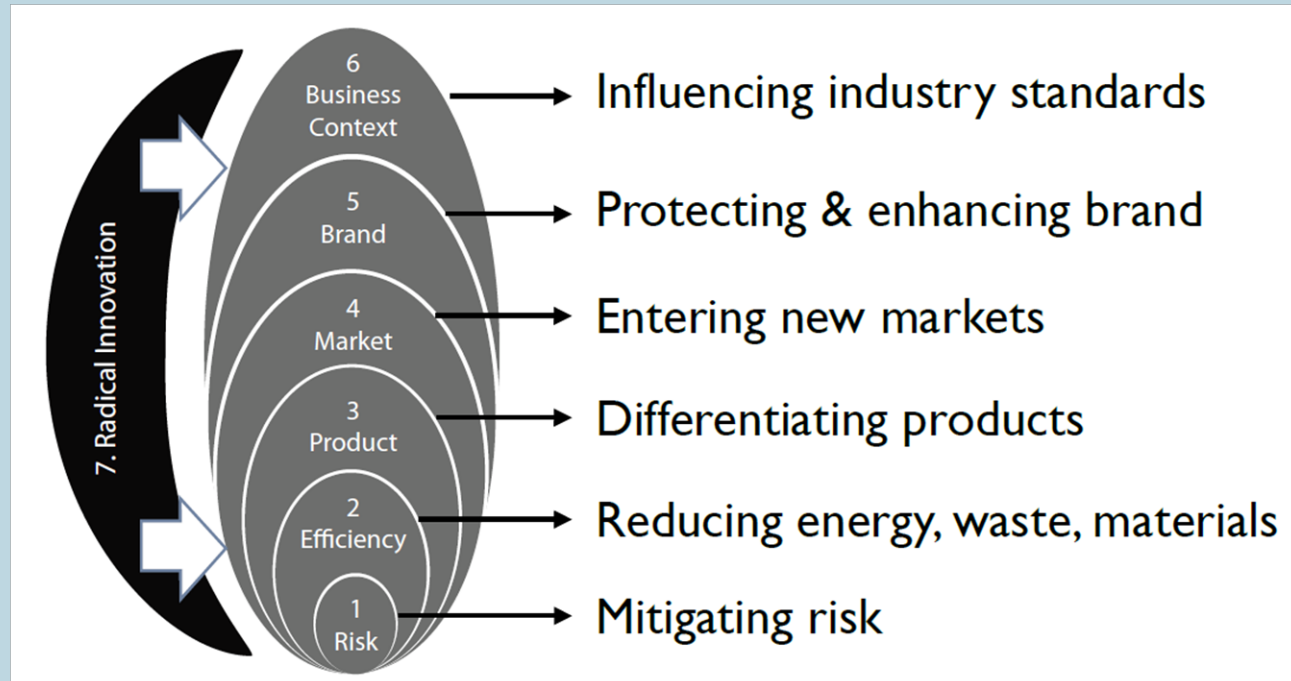
The Paris Agreement

- The Paris Agreement is a landmark international accord that was adopted by nearly every nation in **2015** to address climate change and its negative impacts.
- The agreement aims to substantially reduce global greenhouse gas (GHG) emissions in an effort to **limit the global temperature increase in this century to 2 degrees Celsius above preindustrial levels**, while pursuing the means to limit the increase to 1.5 degrees.
- The agreement includes commitments from all major emitting countries to cut their climate pollution and to strengthen those commitments over time.
- The pact provides a pathway for developed nations to assist developing nations in their climate mitigation and adaptation efforts, and it creates a framework for the **transparent monitoring, reporting, and ratcheting up** of countries' individual and collective climate goals.

How Does the Environment Impact Organisations?

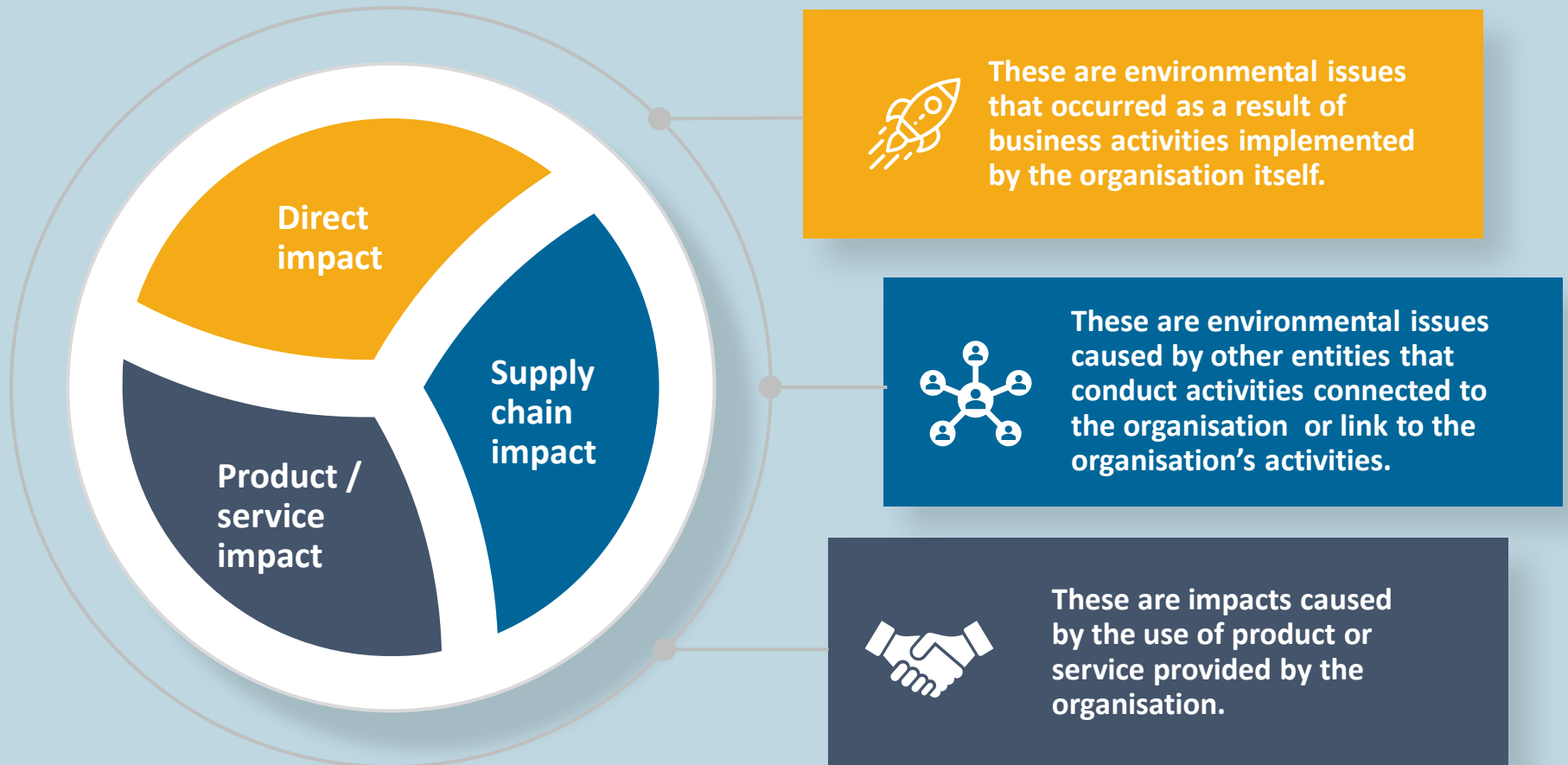


Levels of Sustainable Value Creation



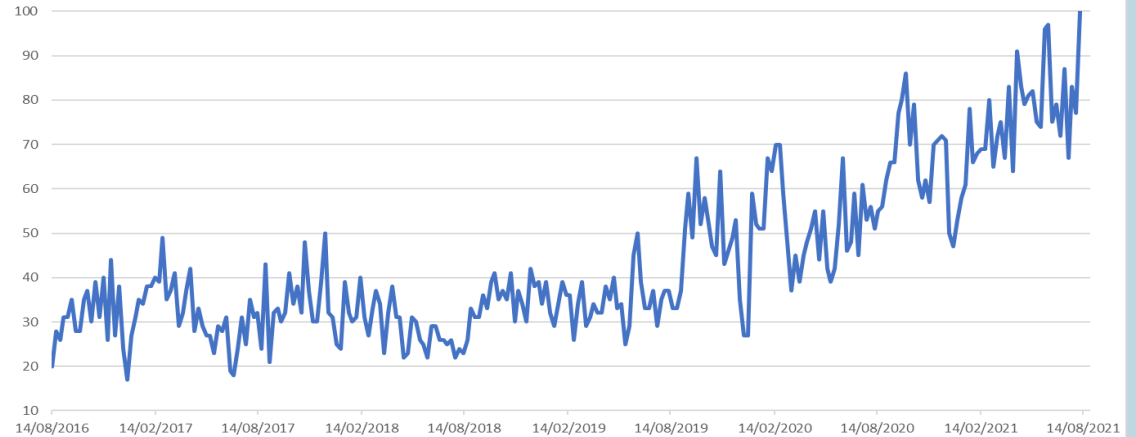
Source: Laszlo (2003), The Sustainable Company.

How Do Organisations Impact the Environment?



Net-zero Emissions!




"Net-zero" Google Keyword Search Worldwide Trend



SCOPE 1:
From sources owned or controlled by a company

- Vehicles and Equipment 
- Stationary Combustion 
- Wastewater Treatment 
- On-site Landfills 

SCOPE 2:
From the generation of electricity, heat, or steam purchased by a company

- Purchased Electricity 
- Purchased Heating/Cooling 
- Purchased Steam 

SCOPE 3:
From sources not owned or directly controlled by but related to a company

- Business Travel 
- Employee Commuting 
- Contracted Solid Waste Disposal 
- Contracted Wastewater Treatment
- Others

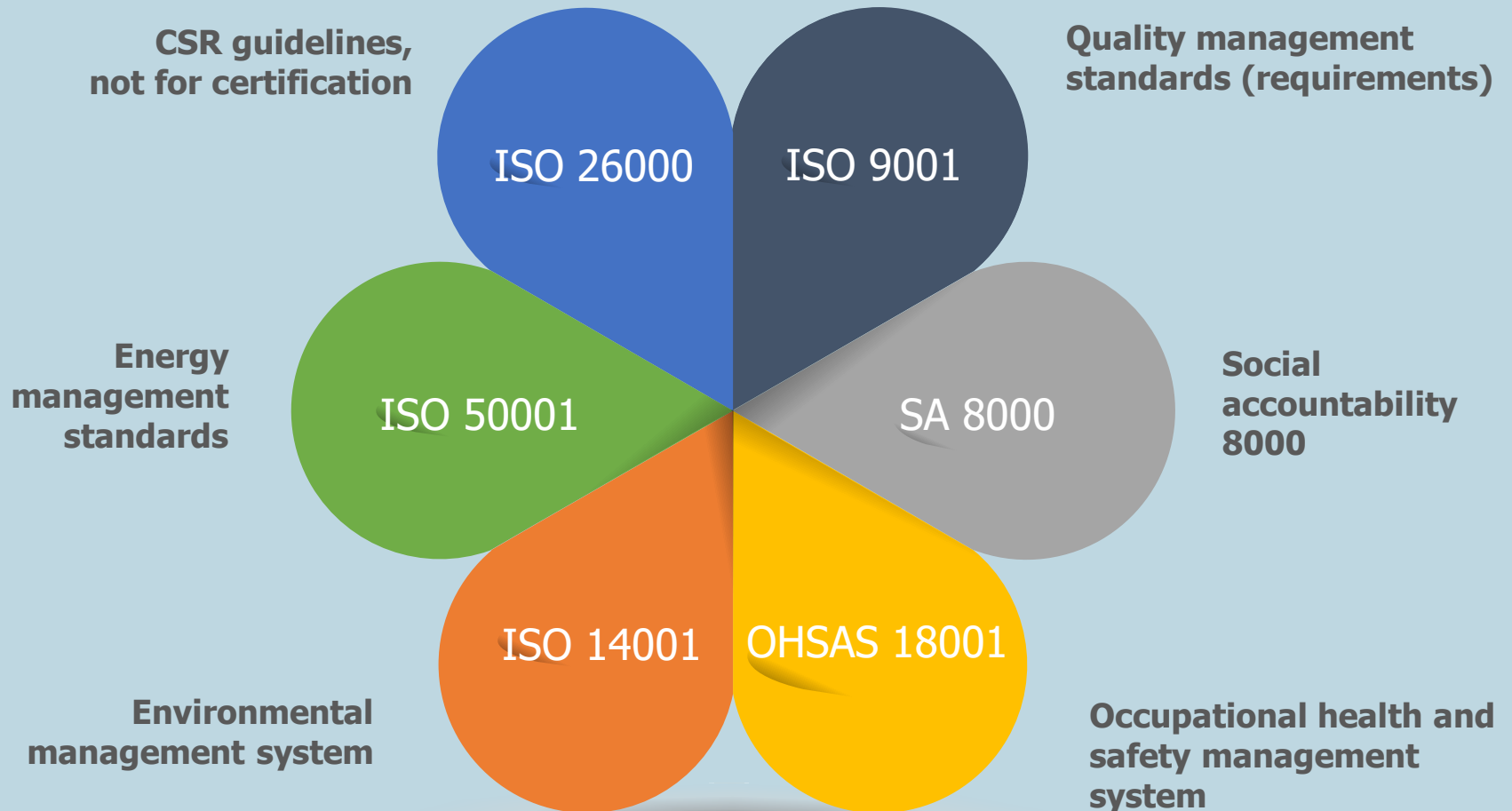
UN SDGs 2030



SUSTAINABLE DEVELOPMENT GOALS



Sustainability Guidelines & Recommendations Standards



Green Business Transformation Strategy

Organisational business strategy

Organisational environmental policy and objectives (with top management accountability)

Environmental sustainability maturity levels of organisations

Green initiative opportunities across the business

Planning and product development

- Evaluating products' environmental impact
- Setting targets

Initiatives

- Removing environmentally harmful chemicals
- Reducing packaging load
- Reducing environmental footprint at consumer end
- Recycling and reuse
- End-user eco-friendly disposal

Suppliers

- Supplier development on environmental strategy and regulatory compliance
- Setting targets
- Partnering with suppliers on environmental projects

Initiatives

- Reducing energy and water
- Renewable energy
- Sustainable agriculture
- Water Efficiency
- Eco-friendly packaging
- Waste reduction, treatment and disposal

Manufacturing

- Evaluating manufacturing's environmental impact
- Setting targets

Initiatives

- Reducing energy and water
- Renewable energy
- Sustainable agriculture
- Water conservation
- Waste and water treatment
- Eco-friendly waste treatment and disposal, including decontamination

Warehousing and logistics

- Evaluating warehousing and logistics' environmental impact
- Setting targets

Initiatives

- Reducing energy and water
- Renewable energy
- Reducing fuel consumption per unit of product delivered
- Eco-efficient transportations

Identify, evaluate, and address internal and external factors impacting Green Business Transformation

Setting objectives and targets from selected green initiatives

Labelling Carbon Footprint



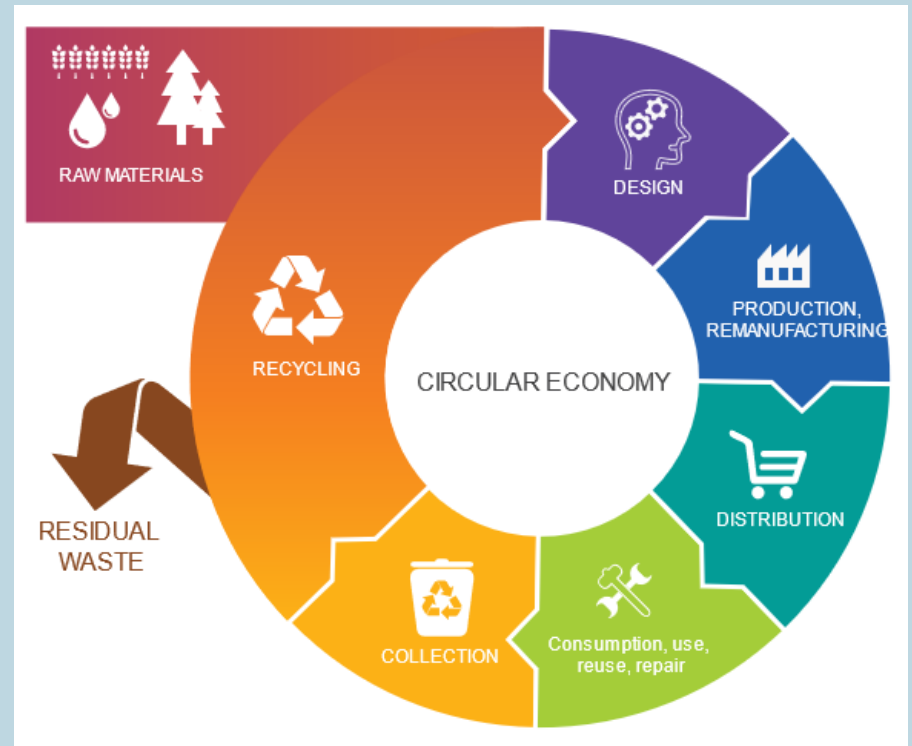
Producers and purchasers are acting in response in climate change



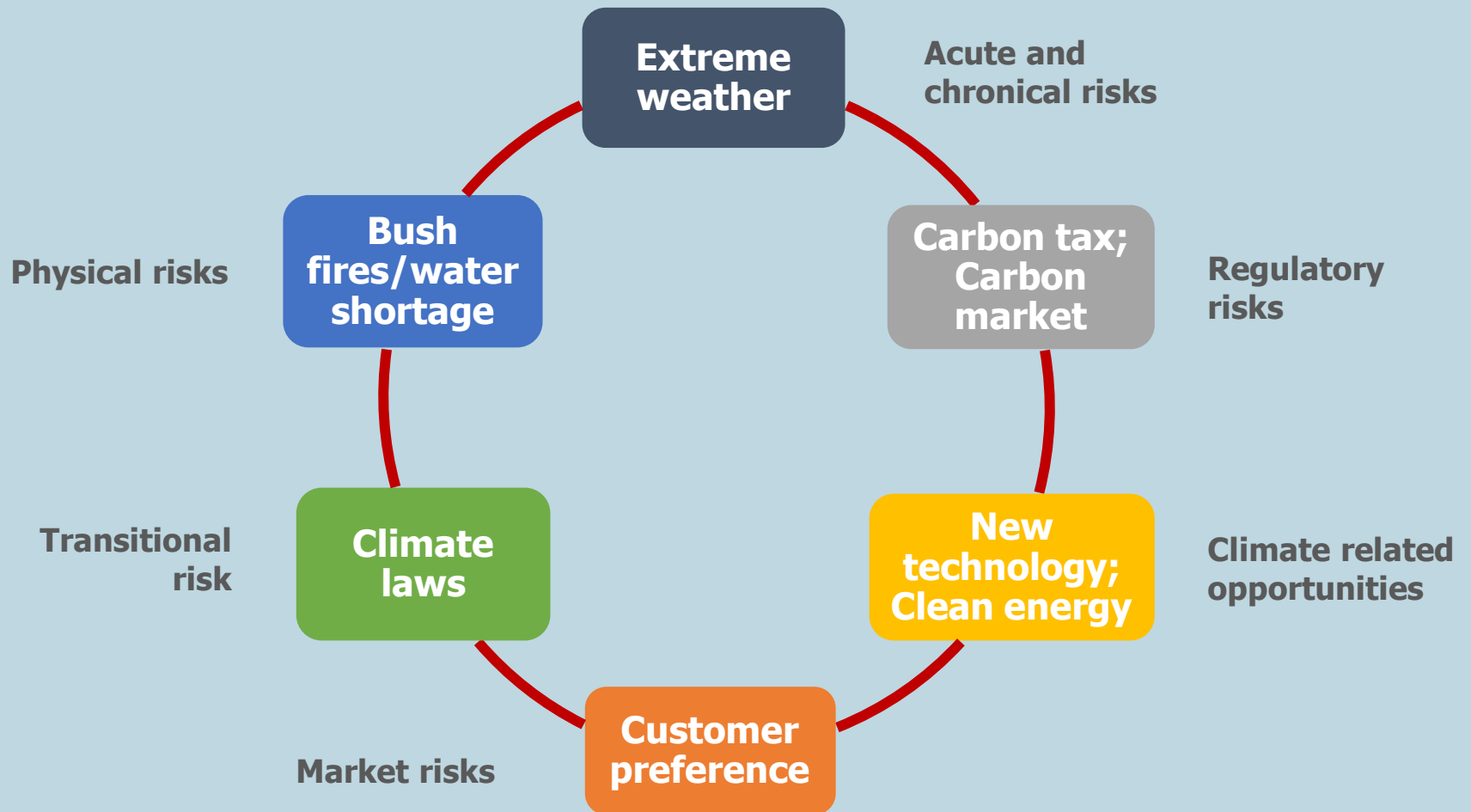
Product's carbon footprint

The mark signifies CO₂

Linear versus Circular Industrial Economy Systems



Climate related Risks & Opportunities



Expected actions and Knowledge for Decarbonisation

Awareness of climate change and obtain knowledge of decarbonisation

How to identify and assess climate related risks and opportunities?

How to measure and report GHG emissions?

How to set up emissions reduction targets?

How to obtain green funds for carbon management?

How to manage green projects?

How to do GHG reporting, carbon assurance and verification?



**Working Together
Towards a Sustainable
Future...**

Carbon Accounting and Sustainability Research Group (CASR) at Western

<https://casr.group/>



- ➔ **Recognised top one research group in terms of publications on carbon accounting in the world.**
- ➔ **Top research team in terms of impact of research by citations.**
- ➔ **Focus on sustainability and climate change management and carbon accounting.**



WESTERN SYDNEY
UNIVERSITY



IN THE WORLD*



- Great News!!!
- RANKED #1 IN THE WORLD
- Times Higher Education ranked Western Sydney University #1 worldwide in 2022 based on its commitment to the United Nations' Sustainable Development Goals

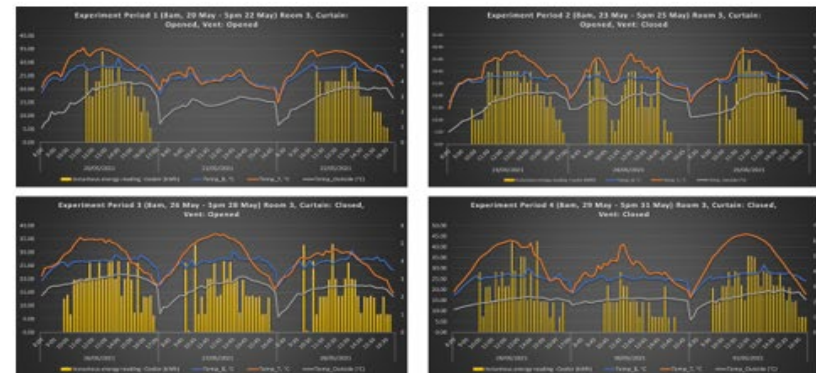
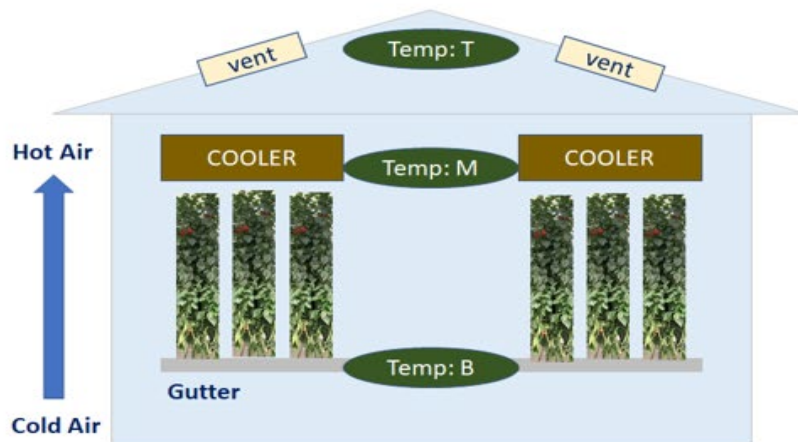
*Times Higher Education ranked Western Sydney University #1 worldwide in 2022 based on its commitment to the United Nations' Sustainable Development Goals

Ongoing Research at Western

Multi-point Temperature Acquisition for Dynamic Energy Operation and Management



National Vegetable Protected Cropping Centre Research, Education and Training



Supporting Our Community through an MBA Internship Project!

WESTERN SYDNEY
UNIVERSITY



**RISING DEMAND
FOR FOOD RELIEF
AS COVID-19
TURNS LIVES
UPSIDE DOWN**



Working with Foodbank NSW & ACT :

- ➔ Understanding and tracking social impact through food donations.
- ➔ Identifying tangible and intangible incentives/benefits derived from food donations.
- ➔ Exploring dynamic and resilient process operations to respond the continuing disruptions through COVID-19 pandemic.



Green Business Transformation Research Project

Green Business Transformation is a holistic and integrated framework amalgamating technology innovation and adoption, business process redesign/reengineering and behaviours of personnel in order to achieve a successful, environmentally sustainable business operation where economic growth is environmentally sustainable and business practices do not put resources at risk.



Please Help Our Research

[https://surveyswester
nsydney.au1.qualtrics.
com/Q/PanelsSection
/](https://surveyswester
nsydney.au1.qualtrics.
com/Q/PanelsSection
/)



Thank You

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