

# The 3D's Digitalisation, Decarbonisation and Diversification

Presenter: David K Martin





The Australian Industry Group is a peak national employer association for Australian industry, linking members to the insights, services and expertise you need to be successful.



# About Australian Industry Group

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## Functions

- Workplace relations
- Human resources
- Education and training
- Apprenticeships and traineeships
- Health and safety
- International trade
- Economics research
- Business improvement
- Standards and regulation

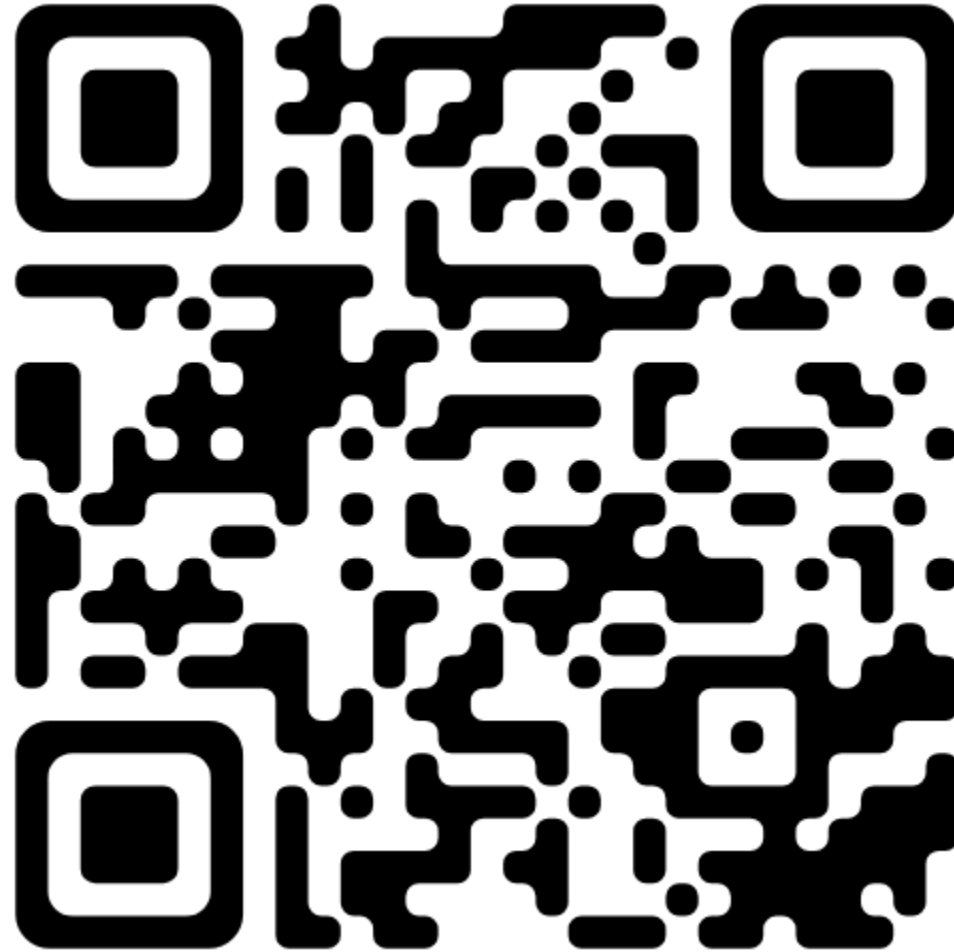
## Industries

- Aviation
- Building and construction
- Communications and technology
- Confectionery
- Defence
- Energy
- Food and beverage
- Fast Moving Consumer Goods (FMCG)
- Health, Community Services, Aged Care and Disability Care
- Manufacturing
- Minerals and resources
- Labour hire
- Printing and packaging
- Retail
- Road transport and logistics
- Utilities

## Special interest

- Cyber security
- Standards
- Climate and Energy
- Diversity, inclusion and reconciliation
- Government funding and grants
- Superannuation
- Taxation
- Visa and immigration
- Waste and circular economy
- Industry 4.0

Questions? We have Slido!



# Our Insights can be found at...

The screenshot shows the 'Research & Economics' page on the Ai Group website. The URL is <https://www.aigroup.com.au/resourcecentre/research-economics/>. The page features the Ai Group logo at the top left, a navigation menu with items like 'Services & Advice', 'Sectors & Advocacy', 'Resources', 'Education & Training', 'Events & Networks', 'News', 'Why Join', and 'Log in'. The main content area has a large image of a woman with glasses working at a laptop, with the heading 'Research & Economics' and a sub-headline: 'Ai Group monitors and analyses developments across the Australian economy. We produce a range of regular activity indicators, reports, submissions and research notes about issues that affect Australian business and industry.' Below this, there is a section for 'Ai Group Australian Industry Index®' and a 'Economic Reports Quick Links' box with a red circle around an upward arrow icon.

The screenshot shows the 'Centre for Education & Training' page on the Ai Group website. The URL is <https://www.aigroup.com.au/education-training/centre-for-education-and-training/>. The page features the Ai Group logo at the top left, a navigation menu with items like 'Services & Advice', 'Sectors & Advocacy', 'Resources', 'Education & Training', 'Events & Networks', 'News', 'Why Join', and 'Log in'. The main content area has a large image of a woman in safety glasses working in a lab, with the heading 'Centre for Education & Training' and a sub-headline: 'Driving bold new thinking on education and training in the context of work.' Below this, there is a section for 'Ai Group's Centre for Education and Training drives bold new thinking on education and training in the context of work. It explores new ways to build skills and capabilities of companies to succeed now and into the future.' and a 'Our proactive research, policy and advocacy agenda strives to ensure Australia's skill development outcomes are in line with current and emerging economic needs, at the same time linking the real needs of industry with the training, education and career aspirations of individuals.' To the right, there is an 'Inside the Centre' sidebar with a red circle around an upward arrow icon.

# The futuremap NetZero Diagnostic

## Decarbonisation

- Understanding of, and reactions to, emissions
- Measures taken towards managing your emissions
- Energy efficiency practices and activities
- Sustainability practices
- Use of I4.0 digital technologies

## Clean Energy

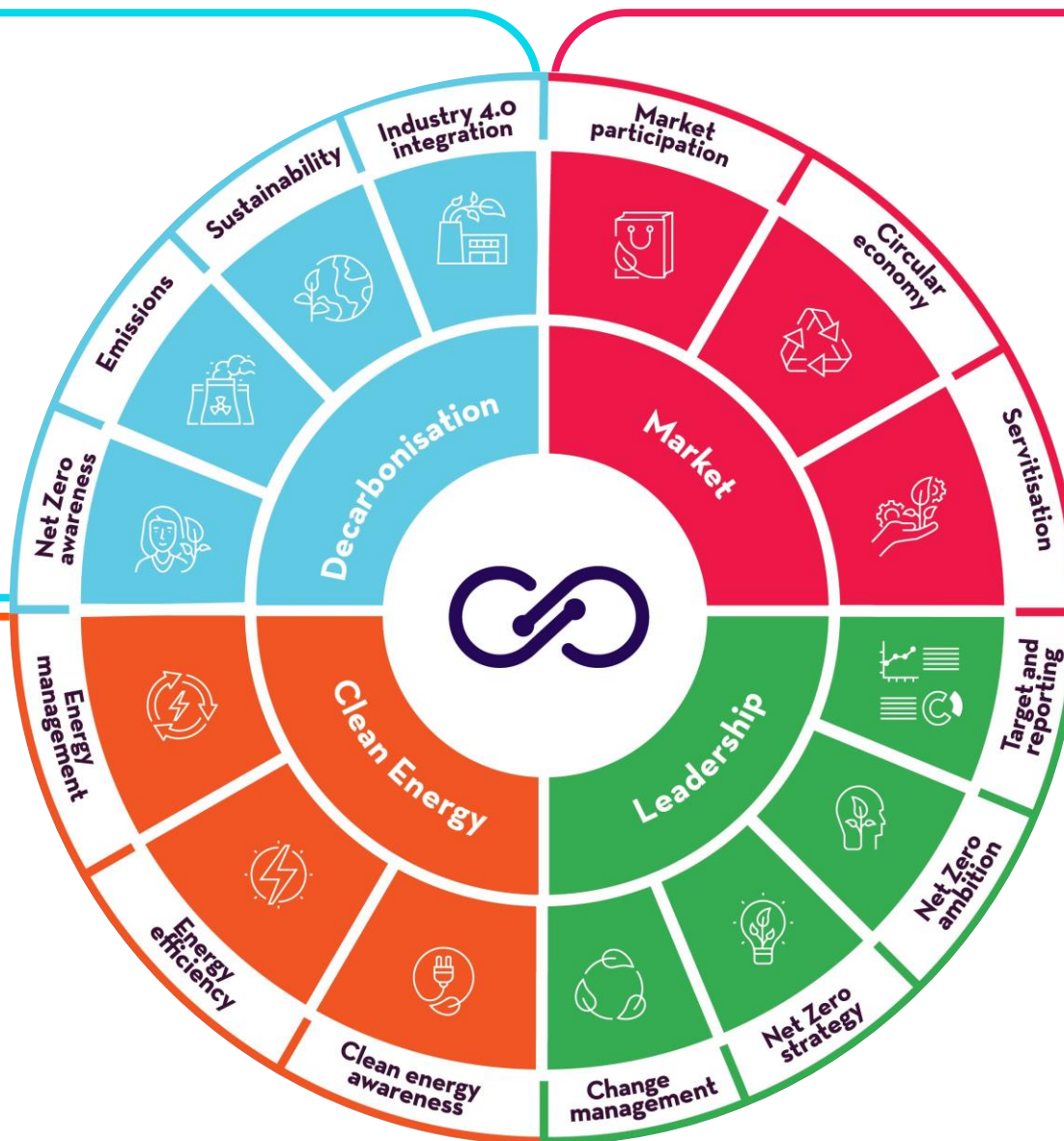
- Awareness & ambition for using clean energy
- Behind-the-meter energy solutions
- Energy management practices

## Market

- Opportunities to participate in net zero economy
- Participation in circular economy
- Servitisation options are being considered

## Leadership

- Target setting & reporting practices
- Alignment & diffusion of Net Zero strategy
- Ambition & sharing of Net Zero strategy
- Readiness & ability to manage transition to Net Zero



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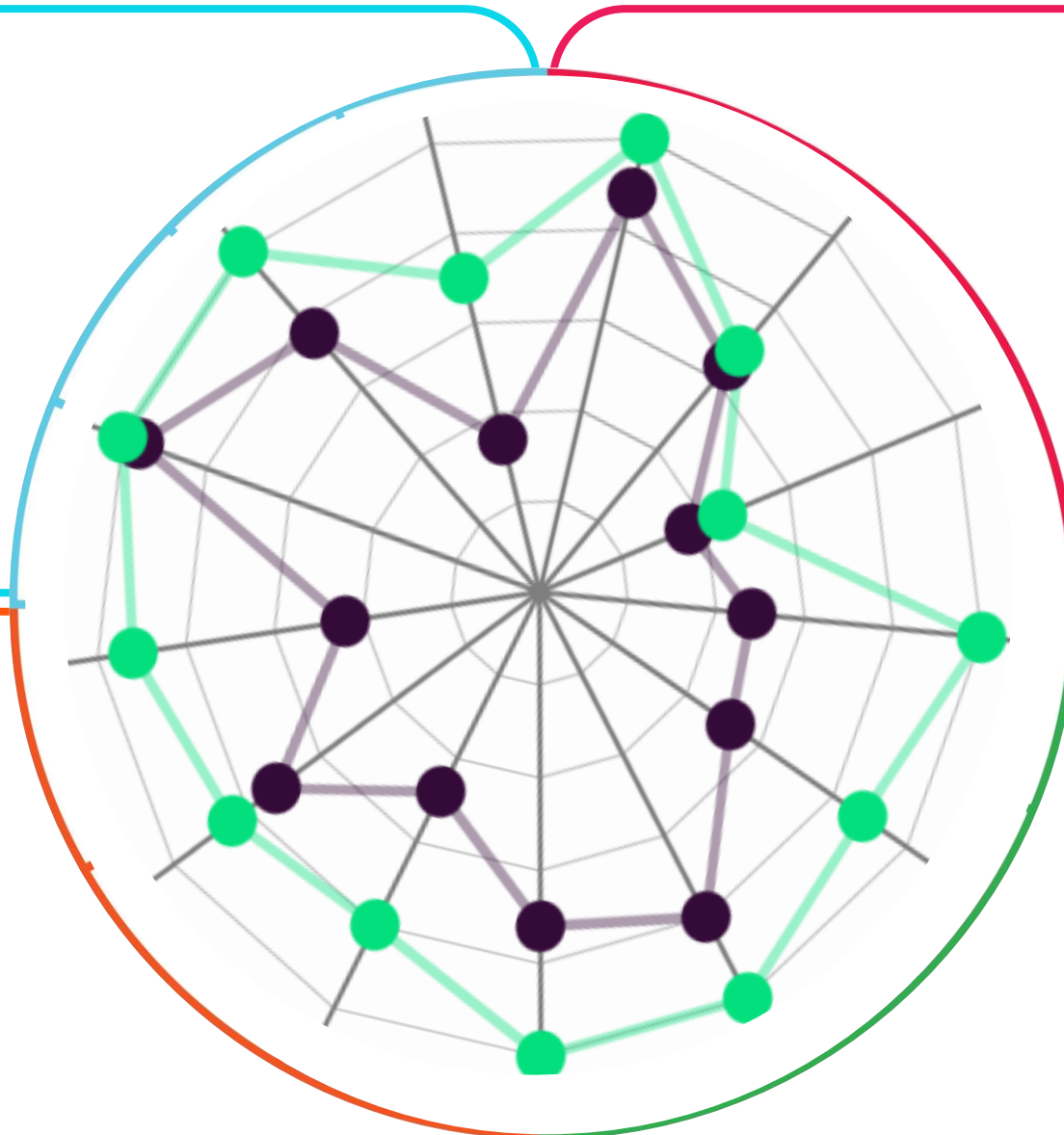
## Market

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- Ambition & sharing of Net Zero strategy
- Readiness & ability to manage transition to Net Zero

**Ai**GROUP | futuremap



# The 3D's

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*“...There is no **Decarbonisation**, without **Digitalisation**.  
There is no **Digitalisation** without **Diversification** beyond old business models...”*





https://www.linkedin.com/pulse/decarbonisation-needs-digitisation-relyability-qtvcc%3FtrackingId=Npu%252...

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Photo by Nejc Soklić on Unsplash

## Decarbonisation needs digitisation

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138 followers

October 31, 2023

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<https://www.linkedin.com/pulse/decarbonisation-needs-digitisation-relyability-qtvcc/>

energy sustainability

# Energy sustainability for Queensland manufacturers

How do you manage energy in your business?

[Assess your business ->](#) [Understand your bill ->](#) [View case studies ->](#)

[Energy Solutions ->](#) [Solar energy calculator ->](#)

https://www.energysustainability.com.au

Type here to search

12:01 PM  
2/11/2023

<https://www.energysustainability.com.au/>

# The big picture – 3D's

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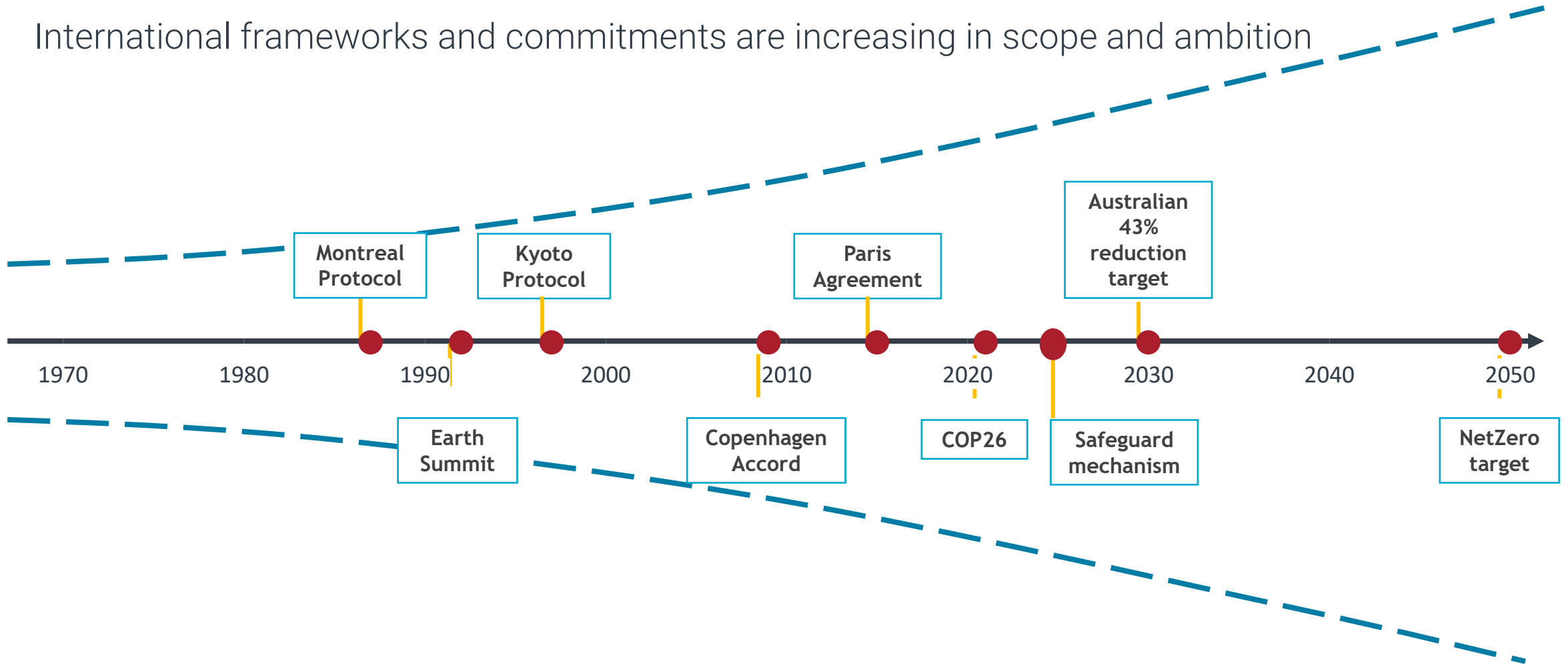
Business in SA are facing a series of challenges that include:

- Management and leadership often weary post COVID-19
- 'Red', 'Green' and 'Grey' tape
- Generational change
- Access to skilled labor
- Energy prices
- Access to capital for growth
- Supply chain delays
- Transport and logistics costs
- Digital transformation
- ESG (Environmental, Social, & Governance)



# Global Agreements and Frameworks

International frameworks and commitments are increasing in scope and ambition



Source: Brett Spicer, Carbon Active, 2022

©The Australian Industry Group

# Times Up (4 years ago)

Business Banking & finance Paris Agreement

## Decarbonise or die, world's biggest investor warns business chiefs



By Nick O'Malley  
January 18, 2022 – 4.40pm

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### Hydrogen economy can support new manufacturing, energy security for developing economies

JANUARY 26, 2021

EDITORIALS

## Technology-first approach best to cut carbon

Pragmatism is needed in managing the politics of climate change.

By EDITORIAL

17TH JANUARY 2022

ARTICLE ENQUIRY SAVE THIS ARTI

BY: SCHALK BURGER

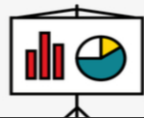
29 October 2021

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# Time's Up for Unabated Industrial Carbon Pollution

Decarbonisation offers Australia immense opportunities. We just need leadership  
*Greg Combet*



AUGUST 22, 2021

THE WALL STREET JOURNAL

## Steelmakers grapple with how to cut carbon emissions

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Meat industry

### Australian red meat industry's net zero target based on land-clearing data that is 'not reliable'

Meat and Livestock Australia says it has reduced emissions by 65% on 2005 levels but data analysis suggests figures underpinning claim are 'erroneous'

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**Woodside**

### Woodside dramatically expands oil and gas exploration spend despite net zero pledge

Australia's largest oil and gas producer stands accused of distracting from credible action to cut emissions by greenwashing its fossil fuel plans

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**Adam Morton** *Climate and environment editor*

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### CSIRO and Swinburne invest in green steel processing to help industry get to net zero

The new partnership will tackle global decarbonisation with innovative mineral processing research and development.

CONTACT SHARE f X in

**ABC NEWS**

Sydney Change location 31°C Max Min of 21°

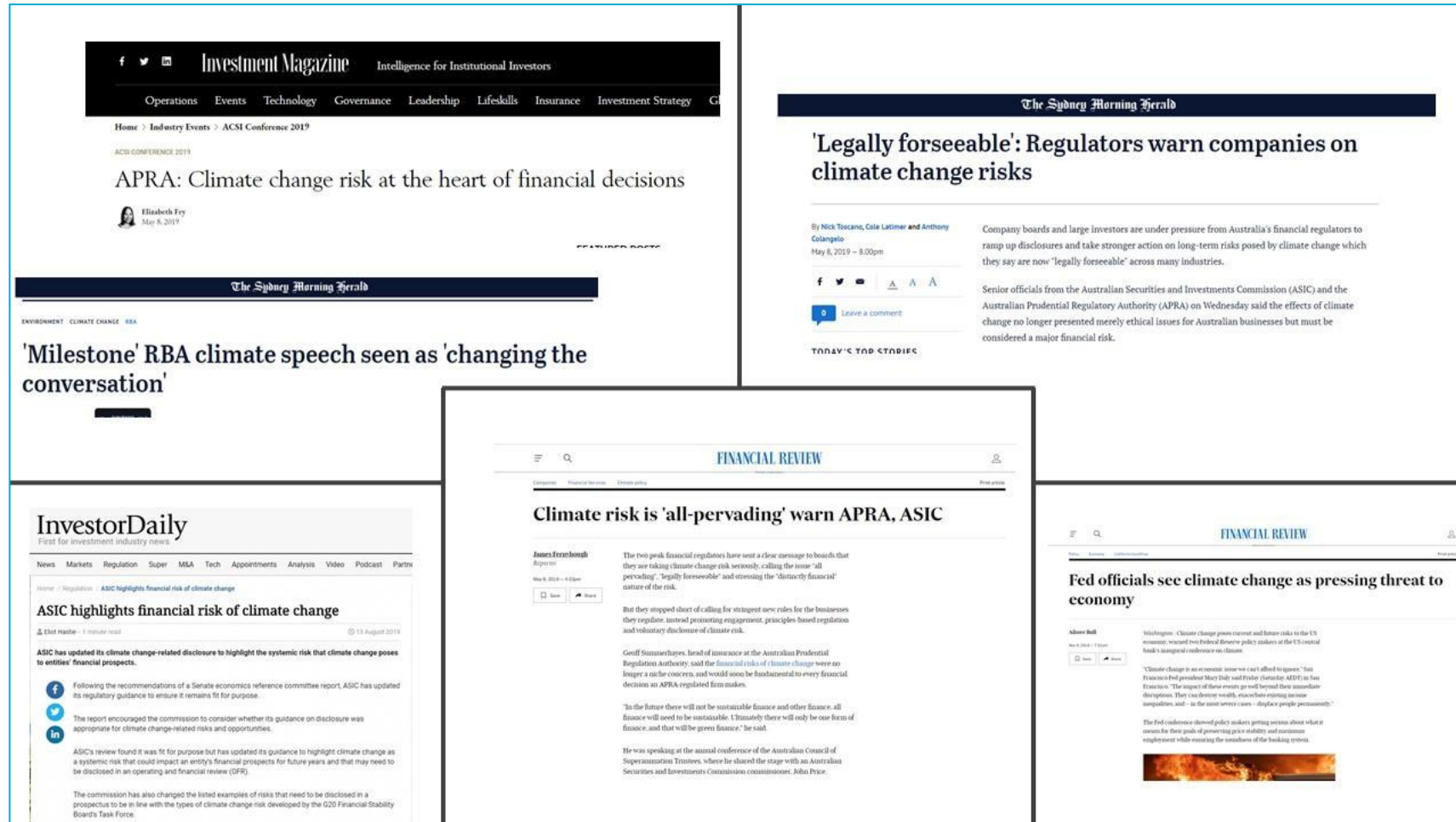
Just In Watch Live Politics World Business Analysis Sport Science Health Entertainment

**FIRE DANGER** Catastrophic fire danger is forecast for the Wimmera district and Extreme fire danger is Mallee, Northern Country and Central in Victoria. Keep up to date with ABC Emergency

### The federal government wants tougher climate reporting rules for large companies

By political reporter Tom Crowley  
Posted Thu 18 Jan 2024 at 4:59am, updated Thu 18 Jan 2024 at 6:57am

# Access to capital and insurance



# NetZero Supply Chain Pressures

- “...We support the Paris Agreement and Australia’s commitment to it, including the objective to keep global warming to well below 2 degrees above pre-industrial levels.
- We measure the greenhouse gas emissions associated with our environmental footprint and, if not already done, within 12 months of joining will set public emissions targets.
- We work with our suppliers and customers to encourage them to reduce their greenhouse gas emissions.
- We believe that a responsible and equitable transition to a low emissions economy is an opportunity to improve Australia’s prosperity.
- We report each year on our progress towards Scope 1, 2 and 3 emissions reduction and are committed to implement credible transition plans...”
- <https://www.climateleaders.org.au/>





# Time to consider your business model (Diversification)

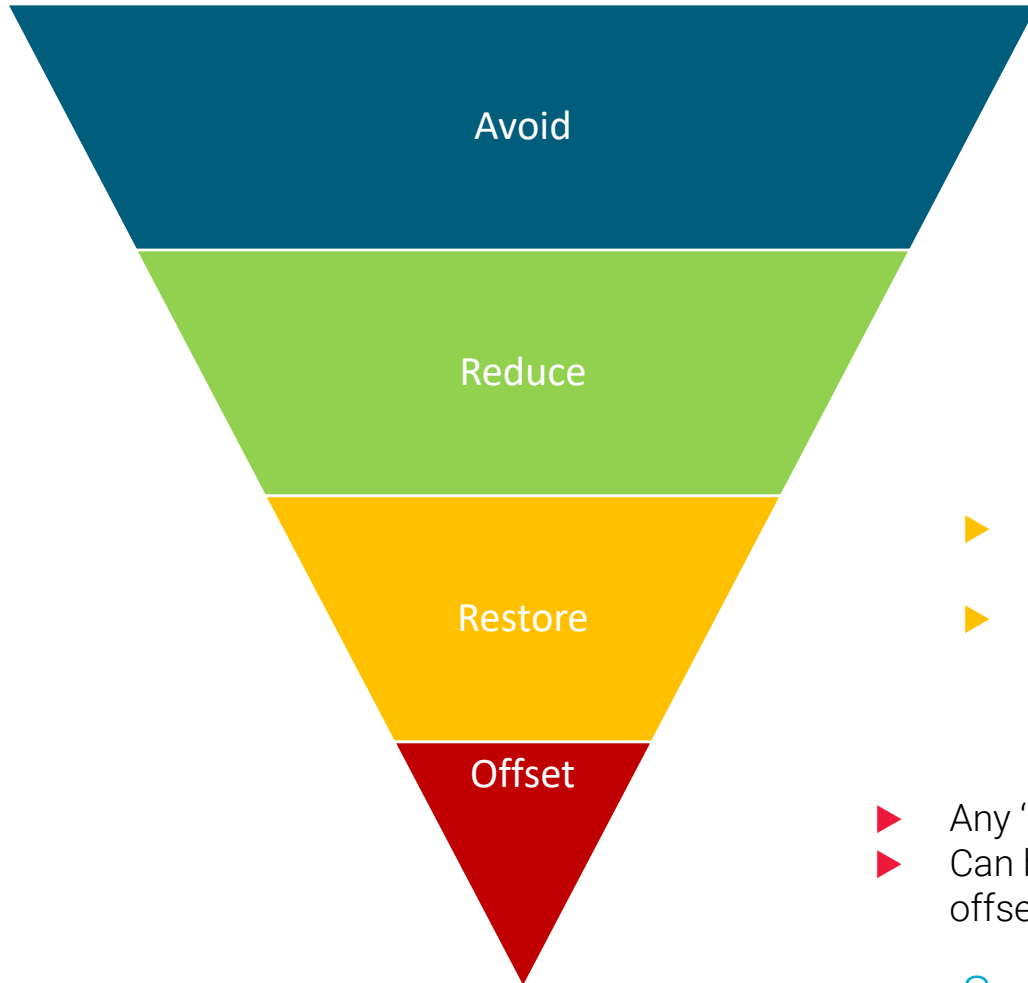
Get used to seeing this slide!



# Think Strategically



# Carbon Mitigation Hierarchy



- ▶ Identify activities that create emissions that could be stopped with no or minimal adverse impacts
- ▶ Best way to reduce emissions is to avoid creating them
- ▶ Usually also involves avoiding costs, so tend to be highly cost-effective

- ▶ Making activities less emissions-intensive
- ▶ Introducing more efficient technologies or upgrading to more modern processes

- ▶ Replacing emissions by transitioning to renewable energy sources (solar PV, wind and hydro power)
- ▶ Technology improvements and a growing awareness of the need to transition away from fossil fuels is seeing the electrification of many processes and sectors (e.g. buildings, transport)

- ▶ Any 'residual emissions' that remain after undertaking the actions above
- ▶ Can be addressed by purchasing/retiring an equivalent number of carbon offset credits (representing one tonne of CO<sub>2</sub>-e)

Source: Brett Spicer, BDO, 2023

# What are the barriers?

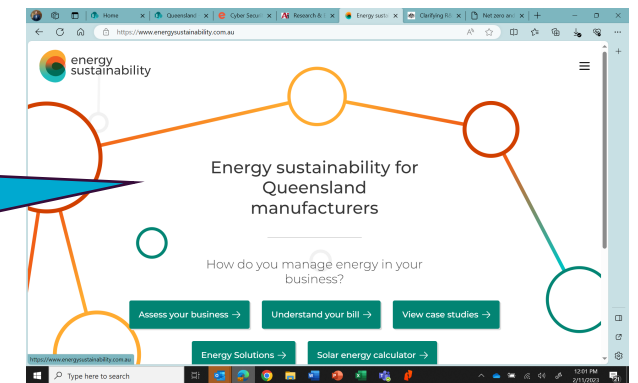
Shell Energy's report titled *"Advancing Renewables in the Manufacturing Sector"* identifies three key barriers to be overcome:

- Poor access to good quality data
- Low energy literacy levels and organisational resources
- Capital constraints and lack of long-term approach

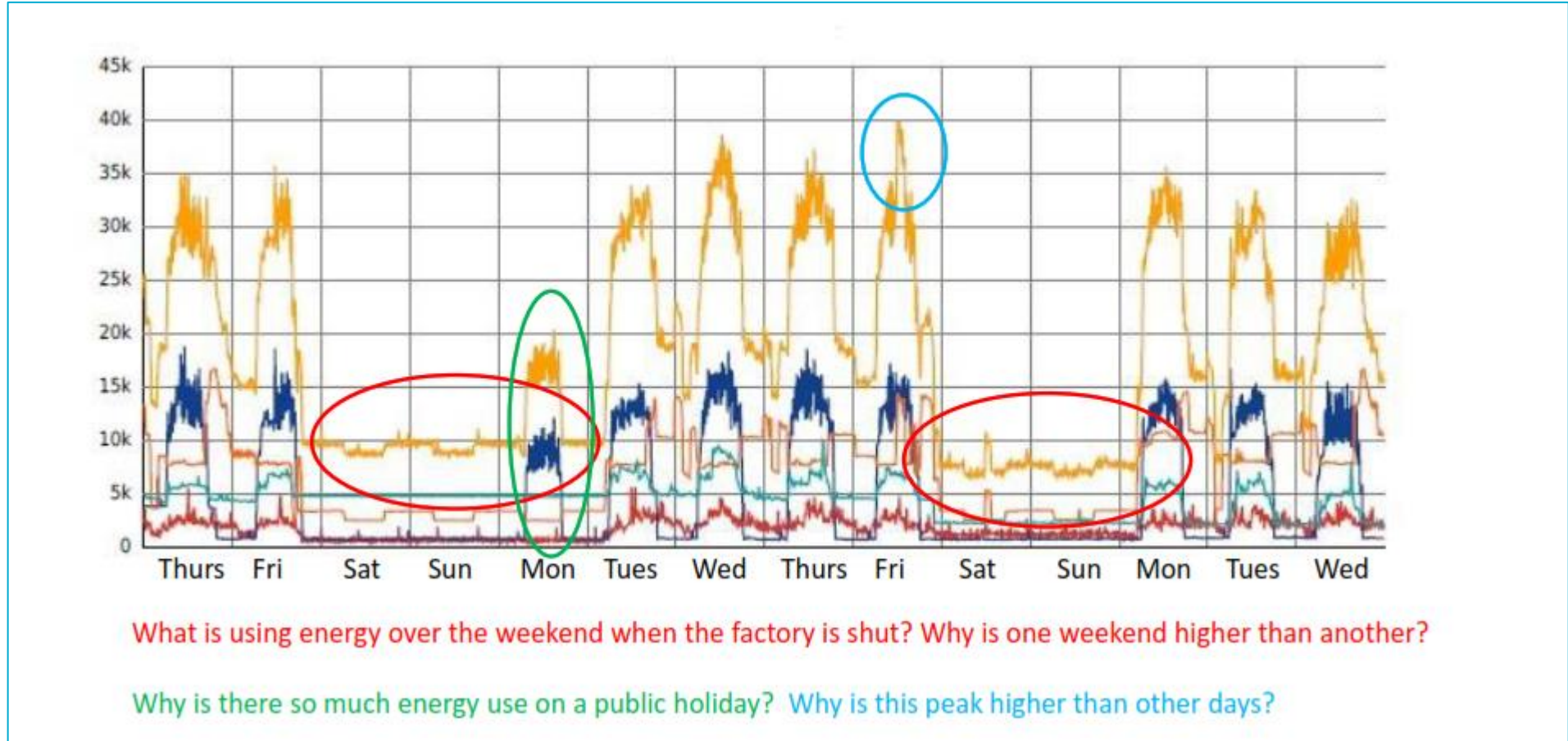
The report also highlighted 'simple' energy saving and emissions reduction solutions with low (<5yrs) paybacks

- Electricity and gas efficiency can save between 10-15% consumption
- Lighting upgrades
- Variable Speed Drives
- Heat (and cooling) recovery
- Burner controls
- Compressed air
- Electrification of gas based process heat
- Onsite renewable energy generation (solar + BESS)

Go here for examples!



# Benefits of Monitoring



Source: The Ecoefficiency Group, 2023

©The Australian Industry Group

# Example: Lighting

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The technology is highly accessible, offering a broad selection from numerous suppliers. It provides substantial savings at a relatively low cost, with typical payback periods of less than three years. For maximum energy savings, it's recommended to utilise integrated controls.

However, there are common barriers and errors to be aware of:

- Glare is often not taken into consideration.
- The technology requires high power quality.



# Decarbonisation needs digitalisation

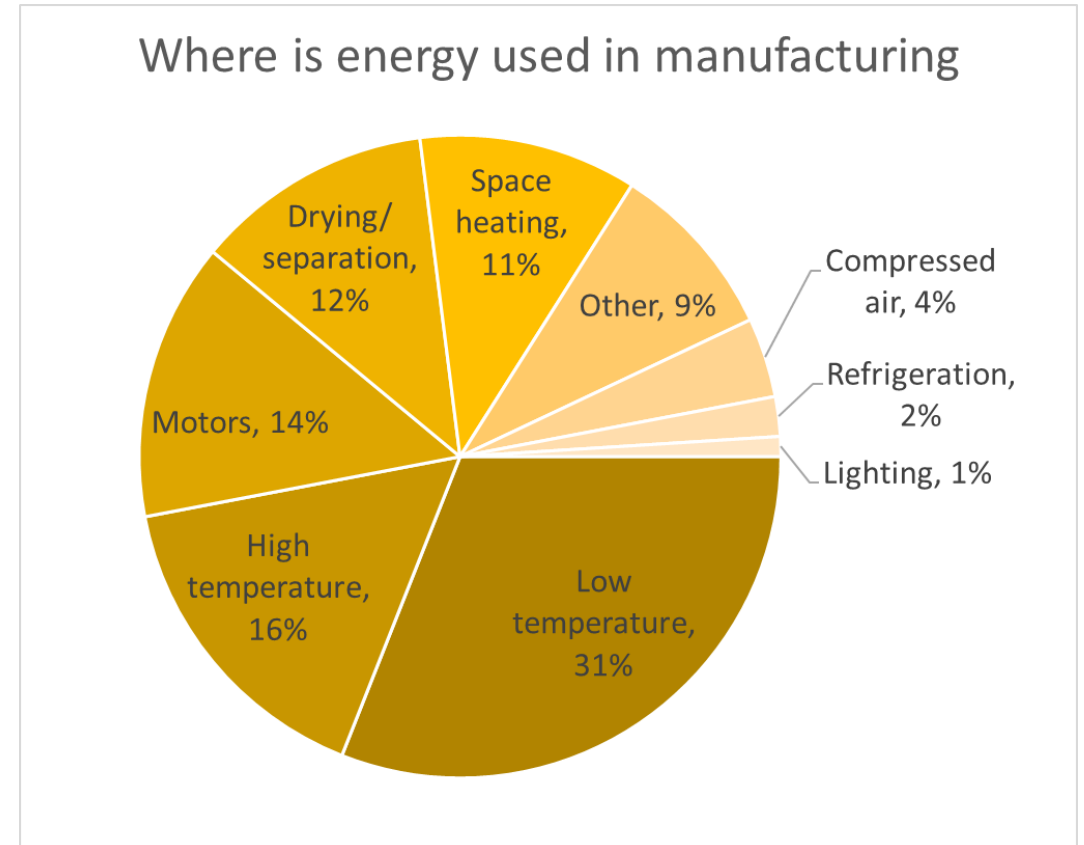
## Energy management

A systematic and coordinated approach to improve your energy efficiency e.g. ISO50001

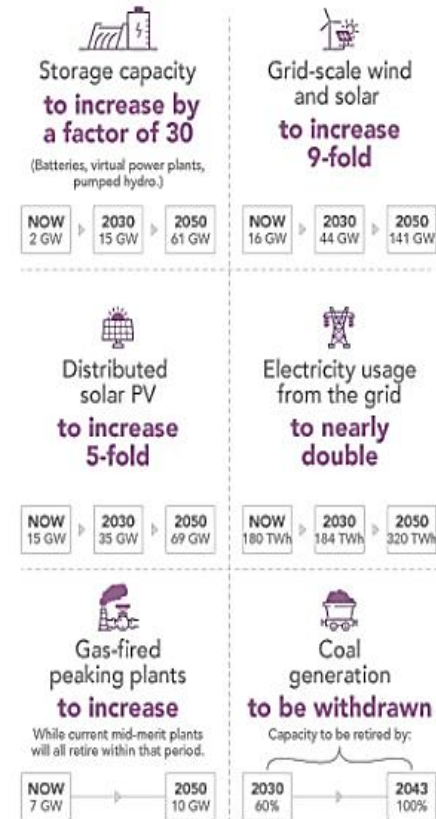
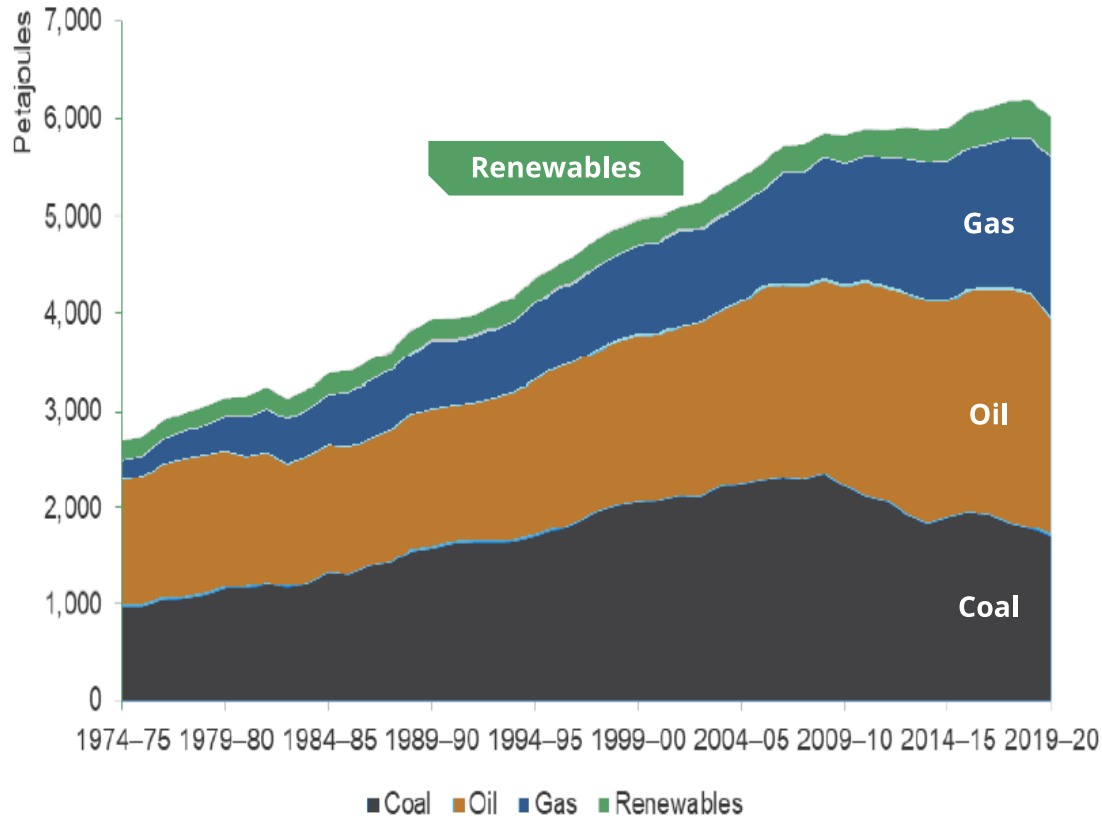
- Roles & responsibilities
- Ongoing reporting & analysis
  - KPIs (fixed => operational)
  - Identify opportunities
  - Verify outcomes
- Priorities & timelines
- Collaborative behaviour
- Reporting to stakeholders

## Access to quality data

Establish baseline, identify waste, provide evidence



# The Australian energy mix is changing rapidly



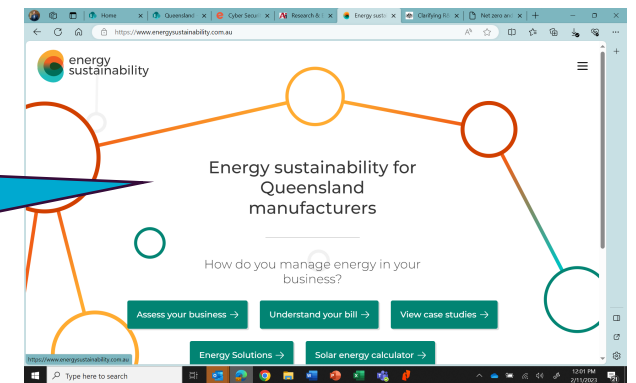


# Key things to consider with electricity and gas

- What is the purpose? Reduce emissions, costs, security of supply?
- What is the ROI, buying electricity from your provider vs installation?
- Long term trends are clear, the future is renewable?
- Impact of quality of electricity on your operations?
- Have you reviewed your power purchase agreement, considered demand management?
- Is gas secure in the medium to long term?



Look at a  
power bill and  
solar calculator



# Does the board and executive know?

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“...The National Greenhouse and Energy Reporting (NGER) scheme, established by the [National Greenhouse and Energy Reporting Act 2007](#) (NGER Act), is a single national framework for reporting and disseminating company information about greenhouse gas emissions, energy production, energy consumption and other information specified under NGER legislation.

The objectives of the NGER scheme are to:

- inform government policy
- inform the Australian public
- help meet Australia's international reporting obligations
- assist Commonwealth, state and territory government programmes and activities, and
- avoid duplication of similar reporting requirements in the states and territories...”

<https://www.cleanenergyregulator.gov.au/NGER/About-the-National-Greenhouse-and-Energy-Reporting-scheme>

# Do I need to report?

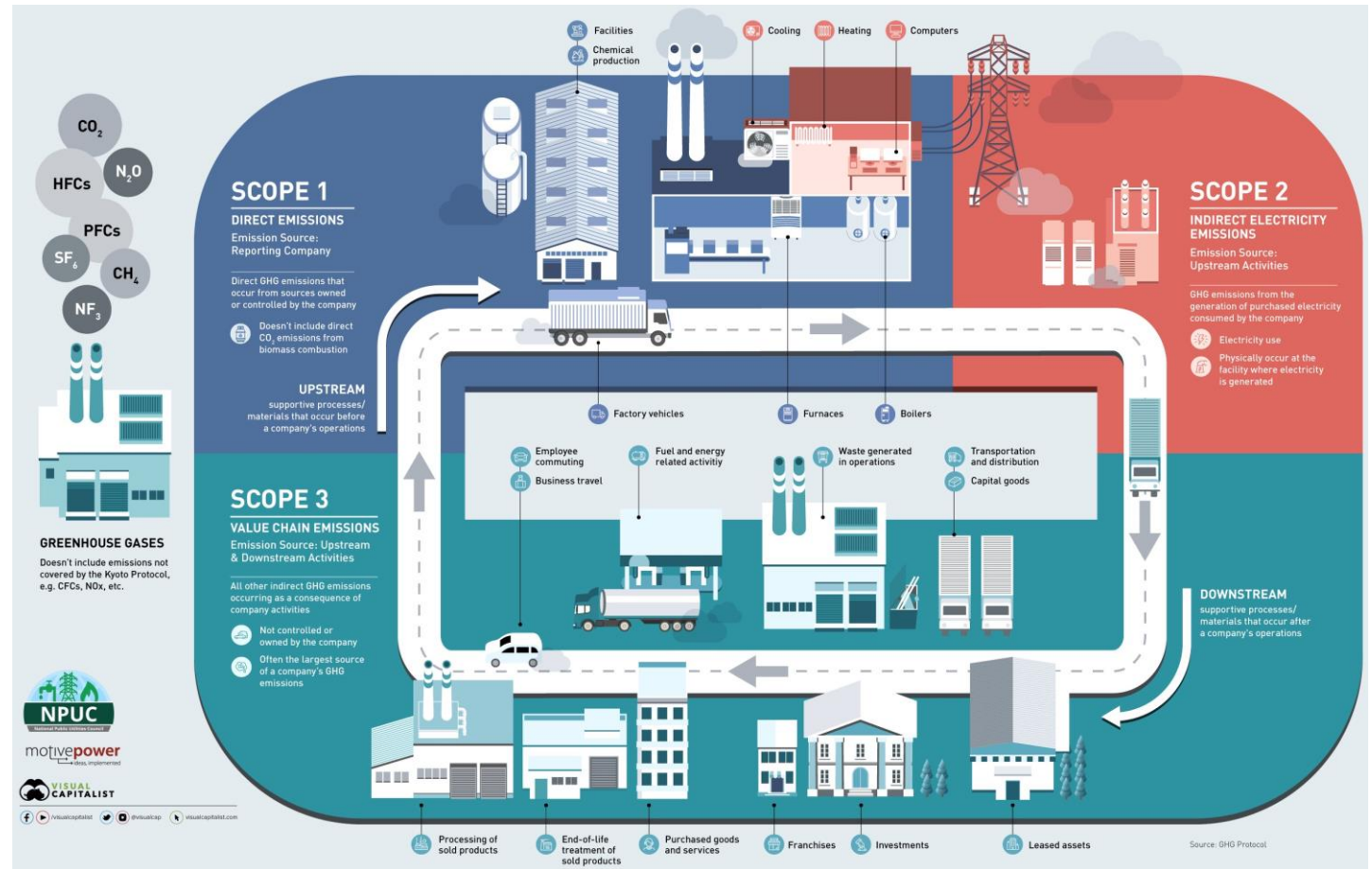
Entities subject to mandatory climate-related financial disclosure would be phased in three groups, over a four-year period as set out in the table below.

First annual reporting periods starting on or after	Large entities and their controlled entities meeting at least <u>two of three</u> criteria:			National Greenhouse and Energy Reporting	Asset Owners
	Consolidated revenue	EOFY consolidated gross assets	EOFY employees		
1 July 2024 Group 1	\$500 million or more	\$1 billion or more	250 or more	reporters	management or more
1 July 2026 Group 2	\$200 million or more	\$500 million or more	100 or more	N/A	N/A
1 July 2027 Group 3	\$50 million or more	\$25 million or more	100 or more	N/A	N/A

Pushed back six months, so far.

# Introducing Scopes 1-3

- Introducing Scopes 1,2 and 3
- Used internationally to identify and report emissions
- Helps to identify where you can be focusing decarbonisation efforts

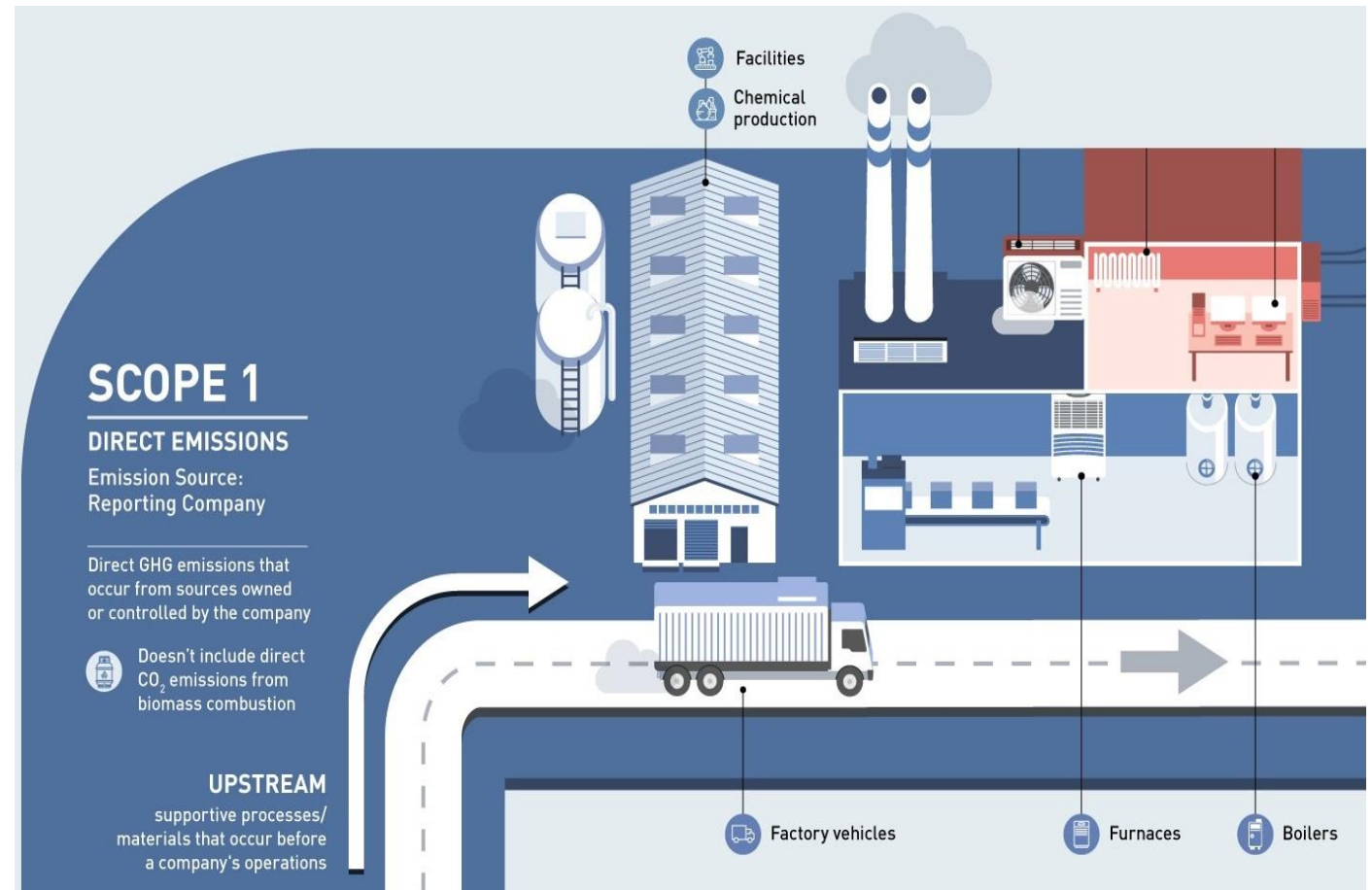


# Scope 1 - your direct emissions

Typically 4 categories

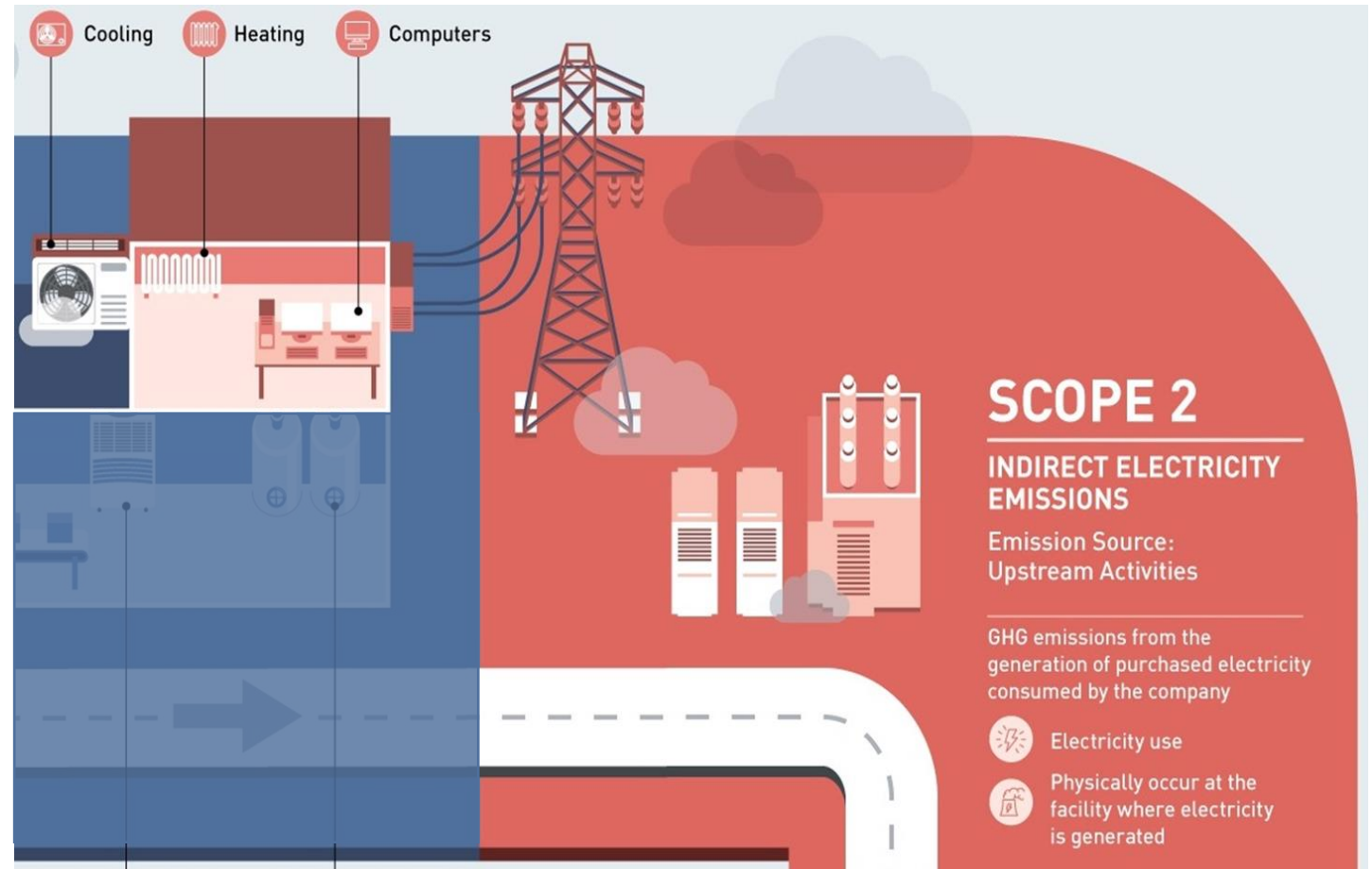
- Stationary combustion
- Mobile combustion
- Fugitive emissions
- Process emissions

- For most Australian SMEs this will be focused on Processing and organisational vehicles



# Scope 2 reflects your indirect emissions

- Indirect emissions created to provide your power
- For most Australian SMEs largely be linked to electricity and gas consumption



# Scope 3 reflects indirect emissions not owned

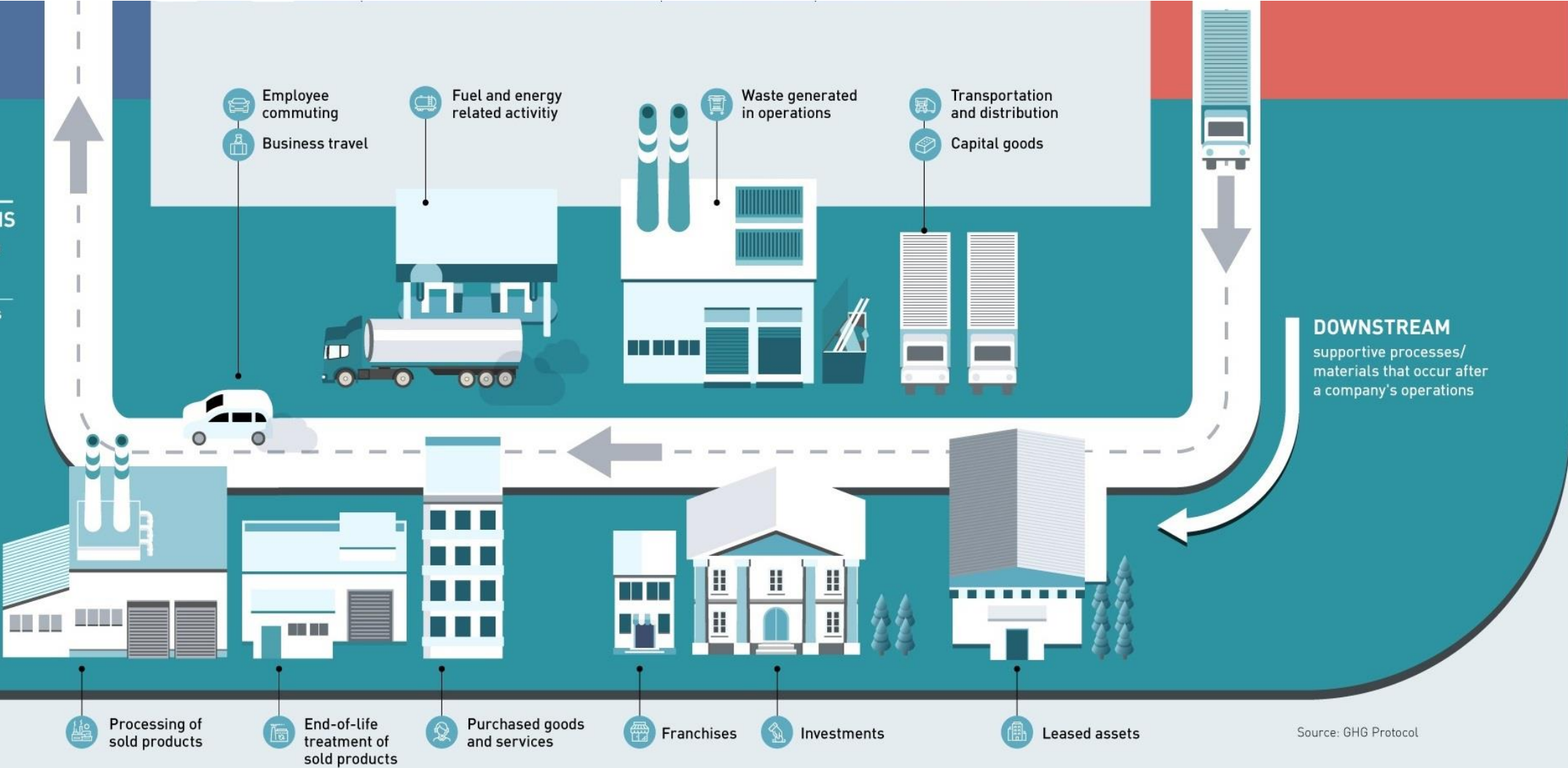
## SCOPE 3

### VALUE CHAIN EMISSIONS

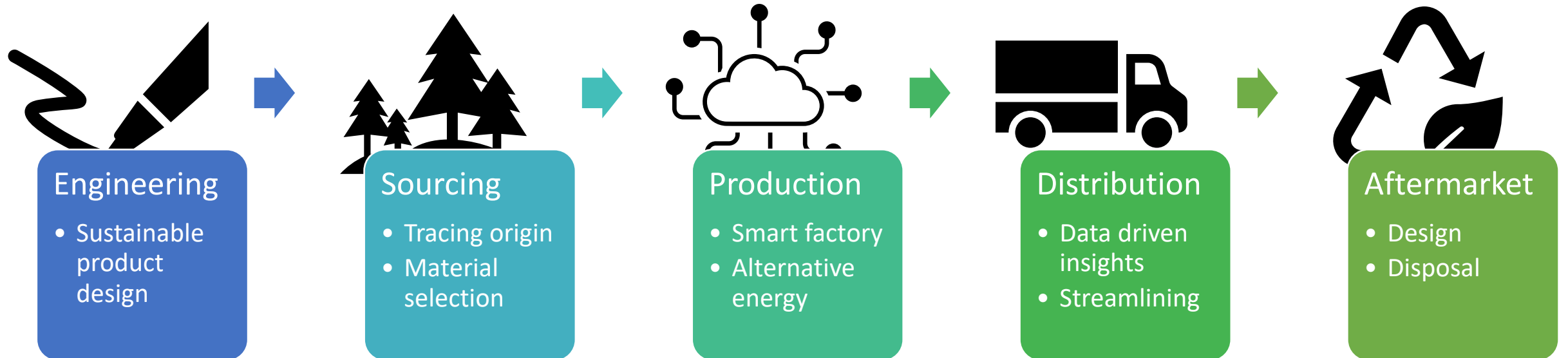
Emission Source: Upstream & Downstream Activities

All other indirect GHG emissions occurring as a consequence of company activities

- Not controlled or owned by the company
- Often the largest source of a company's GHG emissions



# Sustainability practices could be at the centre of your decarbonisation efforts





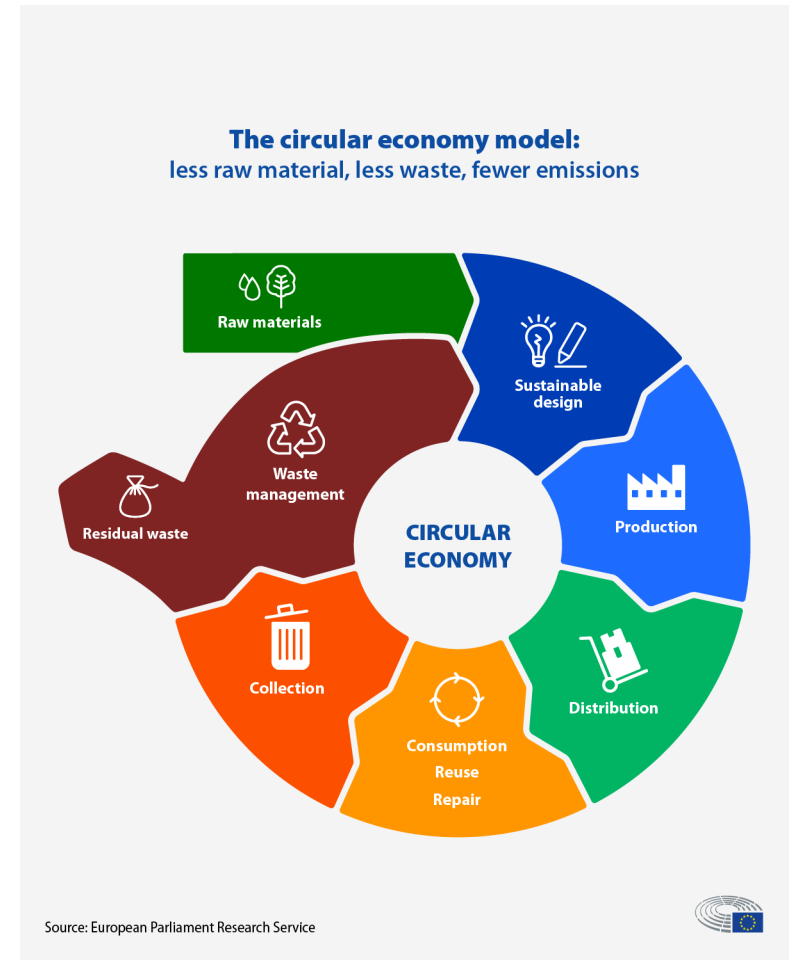
# What about the circular economy?

“...The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended.

This is a departure from the traditional, linear economic model, which is based on a take-make-consume-throw away pattern. This model relies on large quantities of cheap, easily accessible materials and energy...”

The circular economy is not recycling

<https://www.europarl.europa.eu/news/en/headlines/economy/20151201ST005603/circular-economy-definition-importance-and-benefits>



## The circular economy model: less raw material, less waste, fewer emissions



Source: European Parliament Research Service

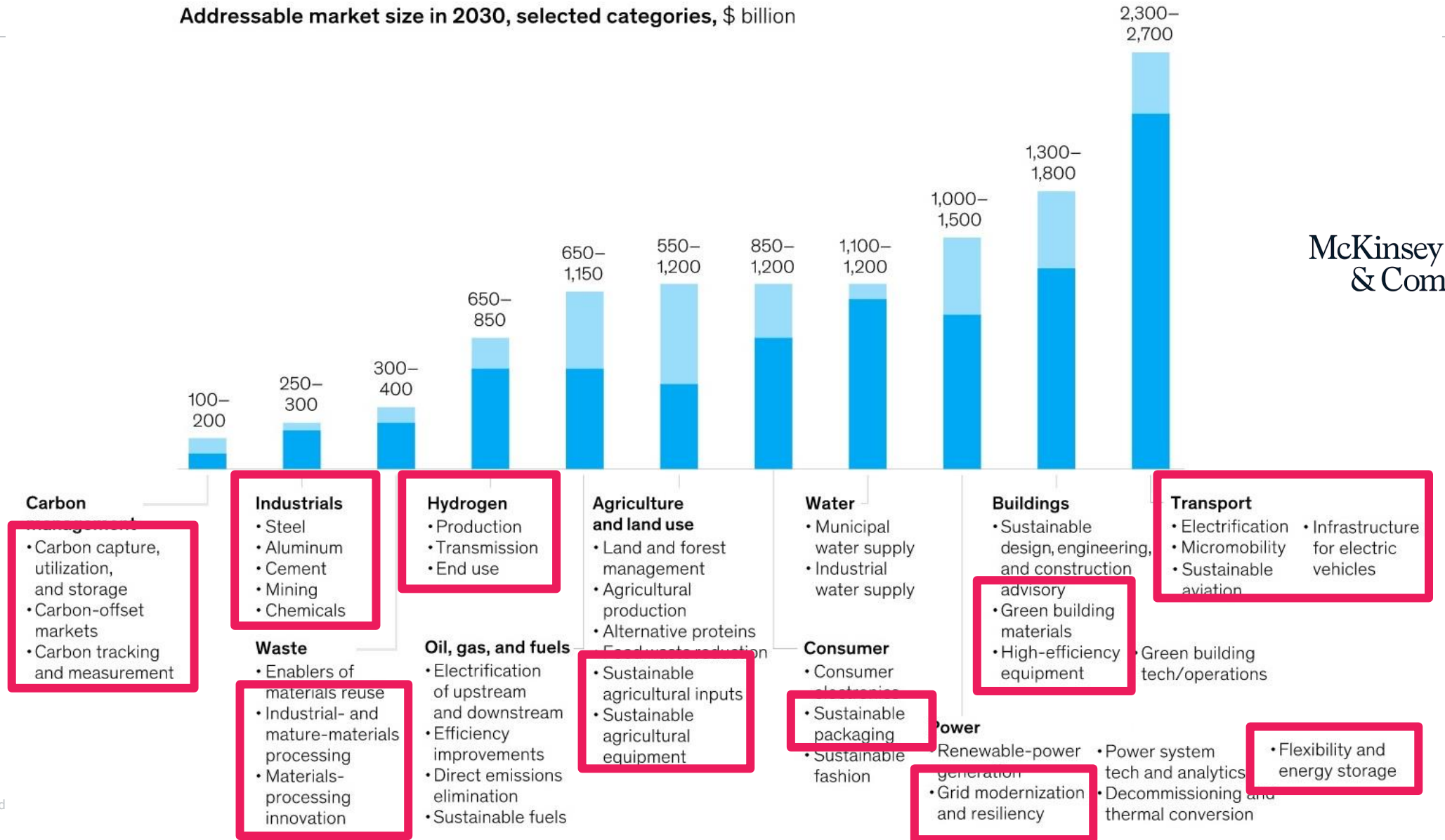


# Time to consider your business model



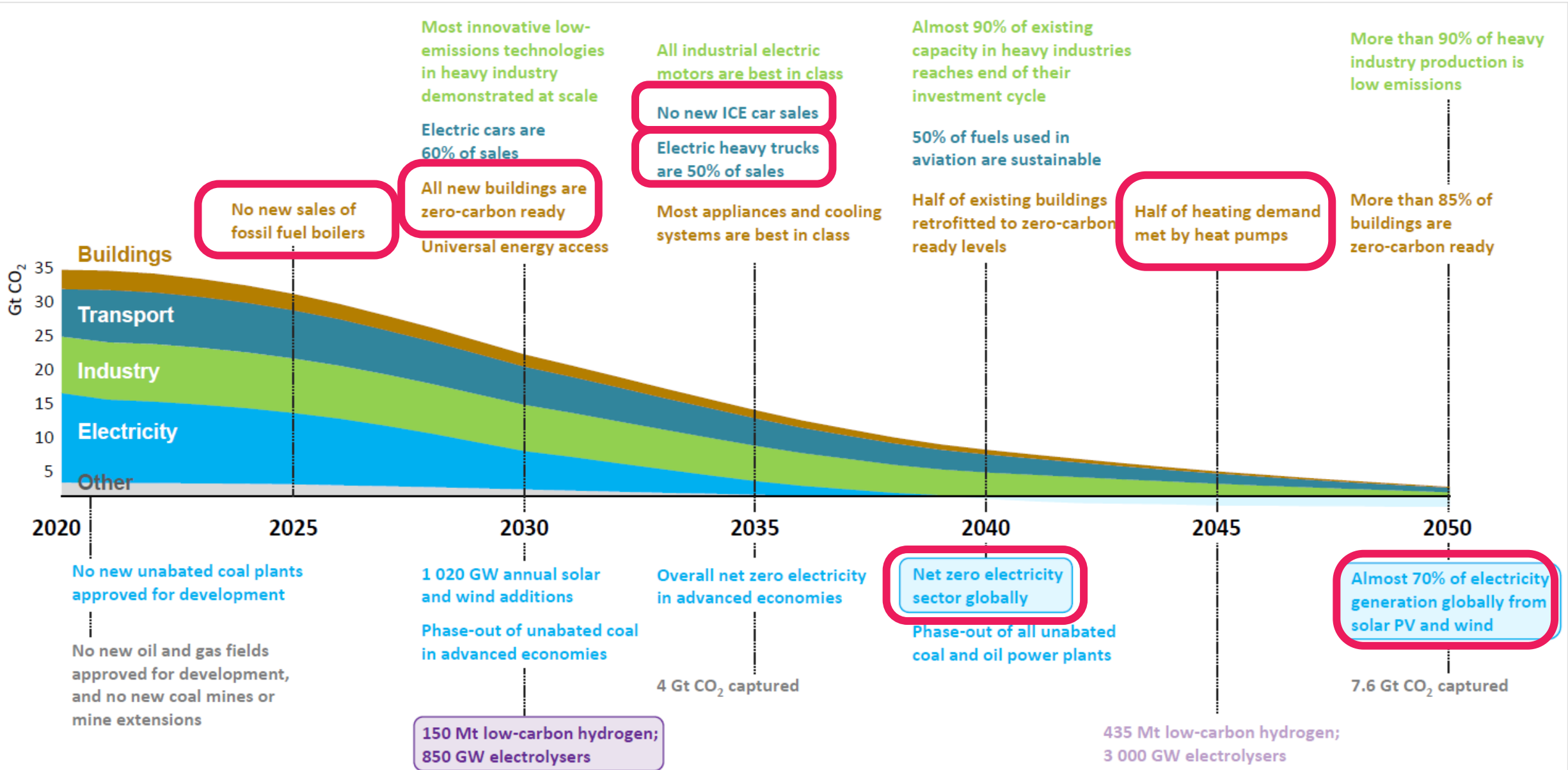
# Future products and services

Addressable market size in 2030, selected categories, \$ billion

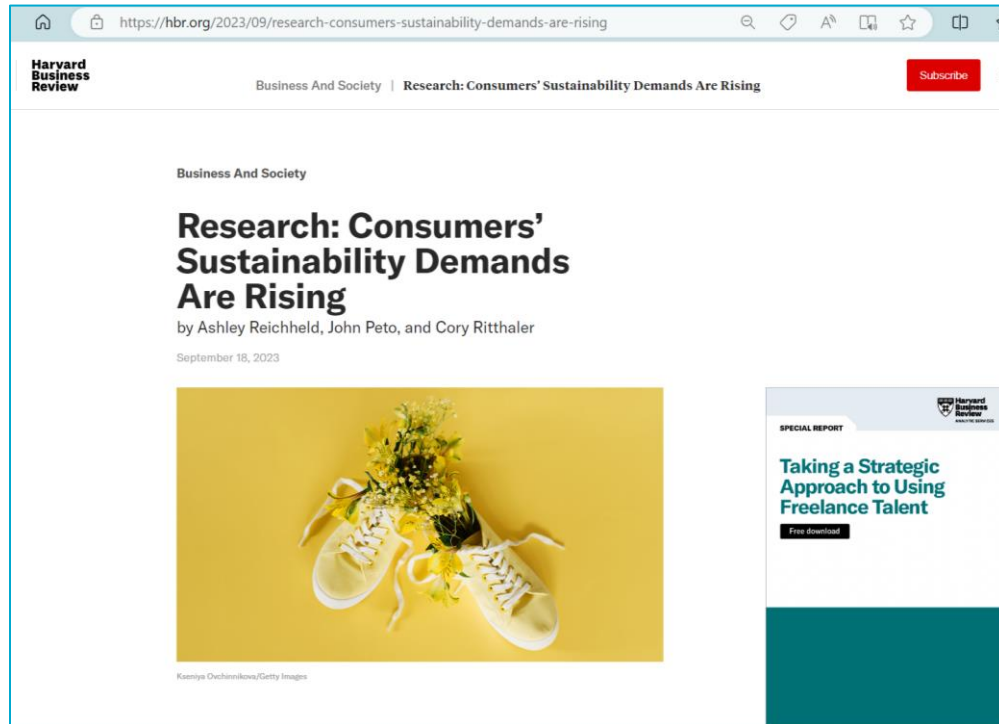


McKinsey & Company

# Key Milestones



# Consumers are driving behavior change




Harvard Business Review | Business And Society | Research: Consumers' Sustainability Demands Are Rising

Business And Society

## Research: Consumers' Sustainability Demands Are Rising

by Ashley Reichheld, John Peto, and Cory Ritthaler

September 18, 2023

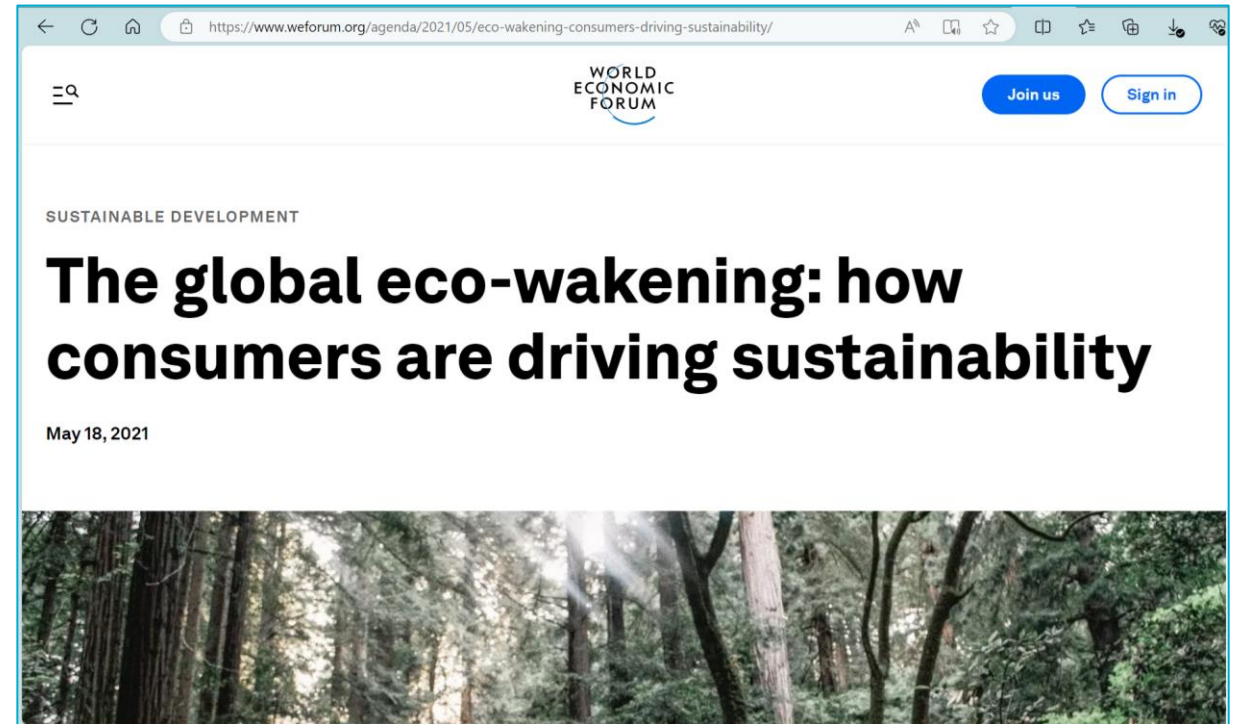


Kseniya Ochebnikova/Getty Images

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SUSTAINABLE DEVELOPMENT

## The global eco-wakening: how consumers are driving sustainability

May 18, 2021



# How are you perceived by your customers and supply chain?

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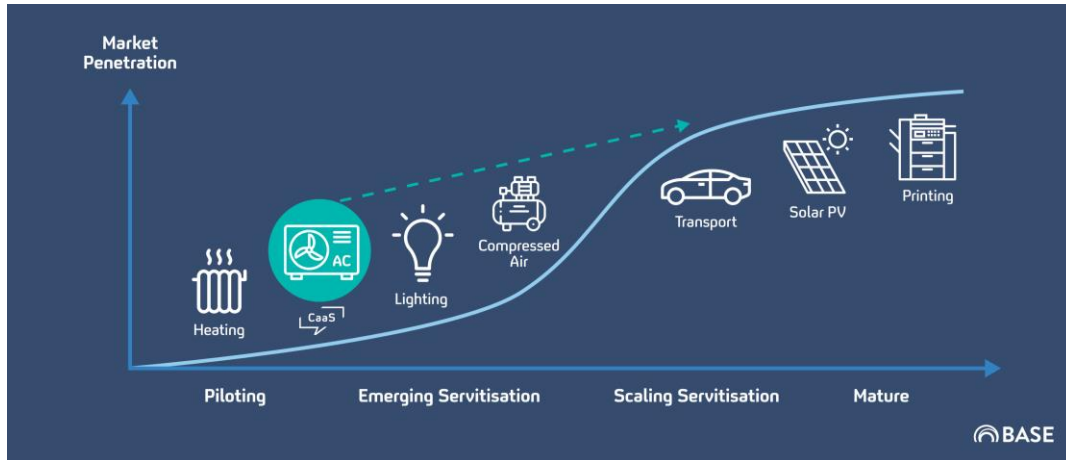
- “...New research shows support for sustainable business is growing in both developed and developing economies.
- Many consumers believe brands bear as much responsibility for positive change as governments.
- Business must commit to protecting nature and natural systems.

Momentum has been building for some time around brand purpose – a reason to exist beyond making money. Now, given the latest research published today, we know that it’s no longer acceptable or smart to ignore sustainability in business.

It should be of considerable interest to the business community then that a key finding in [a new global report](#) from The Economist Intelligence Unit, commissioned by WWF, shows a staggering 71% rise in online searches for sustainable goods globally over the past five years...”

<https://www.weforum.org/agenda/2021/05/eco-wakening-consumers-driving-sustainability/>

# What is servitisation?

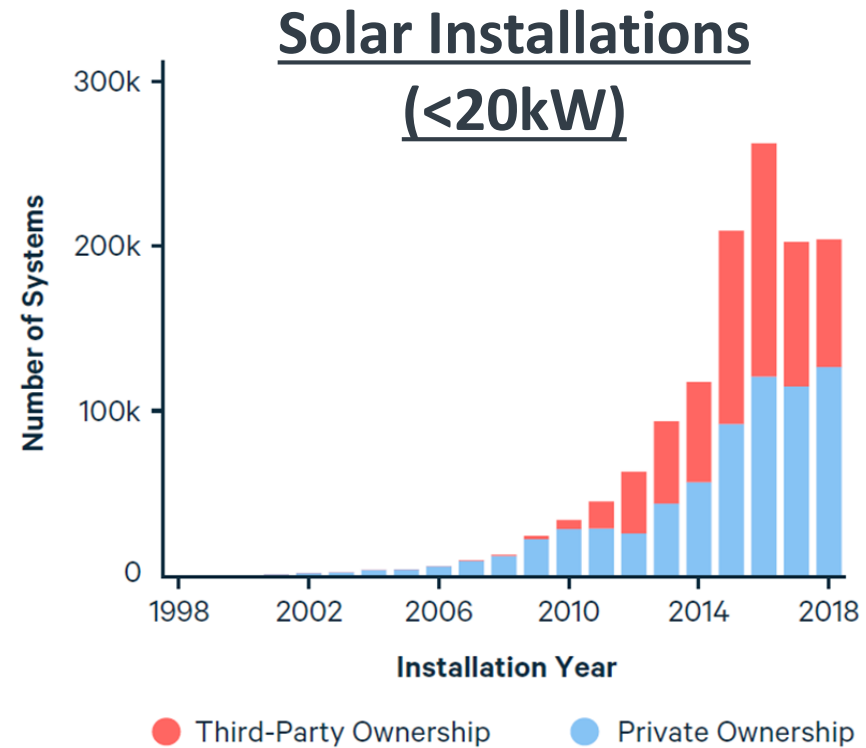


- Customers pay a fixed fee per unit of service consumed.
- The technology provider owns the system and covers all operating costs.
- Encourages long-term thinking in technology design and selection.
- Minimizes operating costs through state-of-the-art maintenance.
- Energy use, the largest cost component, can be significantly reduced.
- Ownership remains with the service provider.
- Promotes the development of modular systems, crucial for a circular economy.



# Solar moving towards third party ownership

Lease or Power Purchase Agreement  
No up-front costs  
No asset ownership  
Incentives to provide best possible system



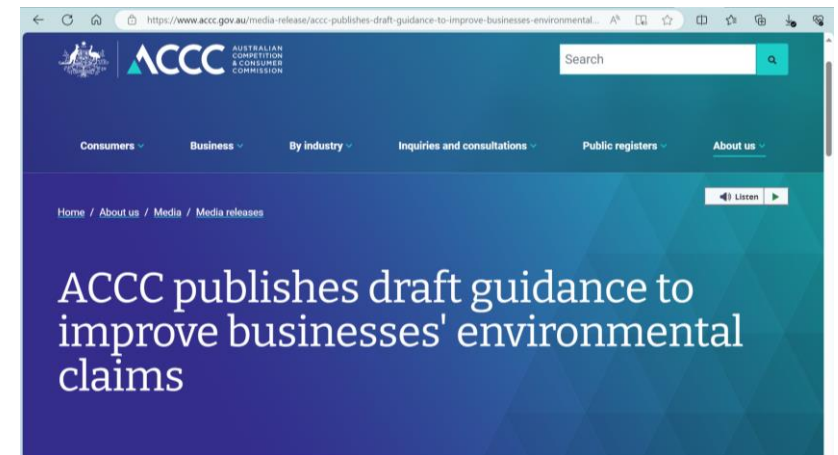
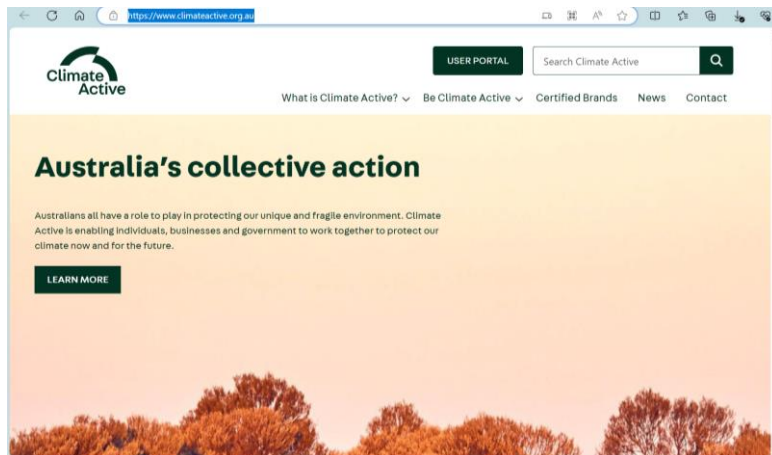
Source: Lawrence Berkeley National Laboratory (2019)<sup>4</sup>

# Time to consider your business model

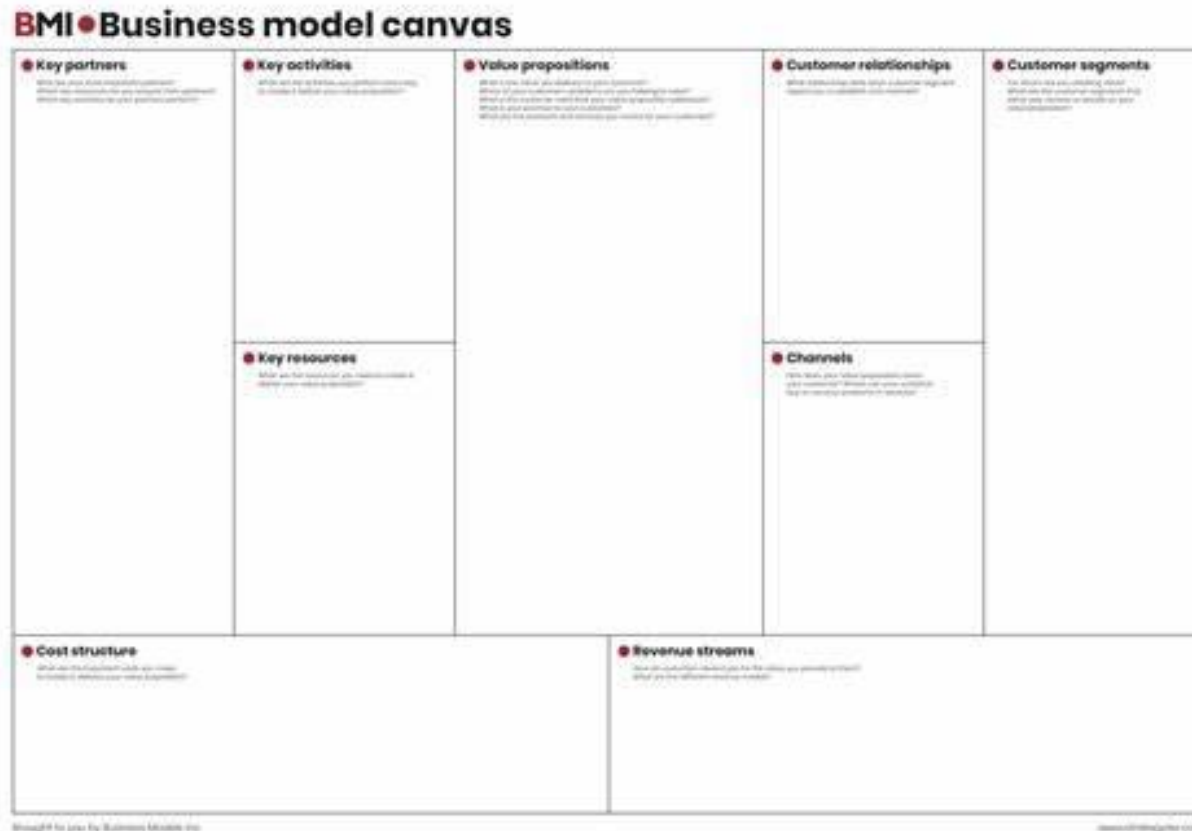


# Assistance – Marketing

- There are a number of accreditation programs available both domestically and internationally.
- Depending on where you export you may need to pay for multiple accreditations.
- Beware also of ‘greenwashing’ your products and services or working with people that do.
- The ACCC is now actively pursuing businesses around their claims.
- Climate Active partners with government. <https://www.climateactive.org.au/>
- Science Based Targets is also a good resource <https://sciencebasedtargets.org/>



# What is your future business model?



<https://youtu.be/QoAOzMTLP5s>

What is your current business model?  
How do you get to your future business model?  
Do you have the data needed to make these decisions?  
What is your unique value proposition in a NetZero world?  
How does this impact on key investment decisions?  
Do you have the skilled people to make the change?  
Where will you get the money?  
What is your pathway forward?  
What are your KPI's/Targets moving forward?

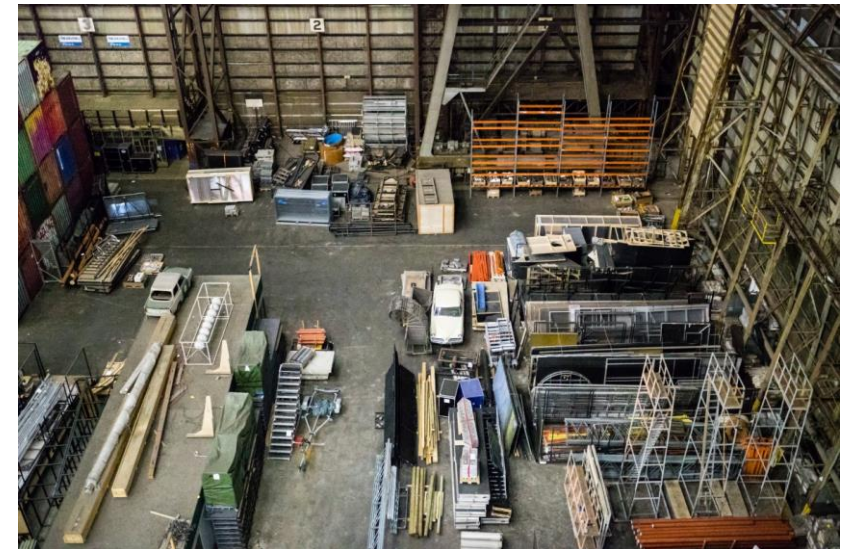
# Is NetZero the new safety?

Safety and risk mitigation is part of all organisations, from the board to the shop floor? Is it time for this discussion?

The investment bias as well as the increasing importance of NetZero and purpose across the manufacturing environment means we may need to modify our decision-making approach.

For example;

- How does Net Zero play into asset decisions?
- Where do ESG targets get discussed?
- What are the primary factors in major decisions?
- How we consider this relative to our purpose?



# Move to ISO50001?

- The goal of the ISO50001 standard is to enable organizations to set up the required systems and process to improve energy performance, including energy performance, usage and consumption.
- As many will have experienced through ISO9001, moving towards a standard can provide the structure to help smaller organizations to navigate the challenges and fast track to a solution.

## The Key to Success: ISO 50001

With the return on investment clear, and with trends in energy and technology pushing the world in the right direction, what does it take to reliably achieve the desired results? More and more companies are realizing that a structured, proactive investment in energy management provides better results than the traditional ad hoc approaches of the past.

For tens of thousands of companies (and many more each year) this has meant adopting the international **ISO 50001** standard for energy management systems. It's a proven, systematic approach for achieving ongoing improvement by helping an organization:

- Develop a policy for energy efficiency
- Set targets and objectives
- Better understand data to make decisions
- Measure results and review effectiveness
- Continually improve

It's also a comprehensive 'big picture' approach, with energy performance measured by taking all relevant drivers into account, such as production, occupancy, weather; and other external conditions.

# Change Management will be critical

$$C = D \times V \times F > R$$

Change happens when the products of...

**D**issatisfaction with the current state, and a

clear **V**ision of a more compelling possible future, and

practical **F**irst steps towards a different future

are greater than the **R**esistance, the pain or cost of change

Gleicher 1977

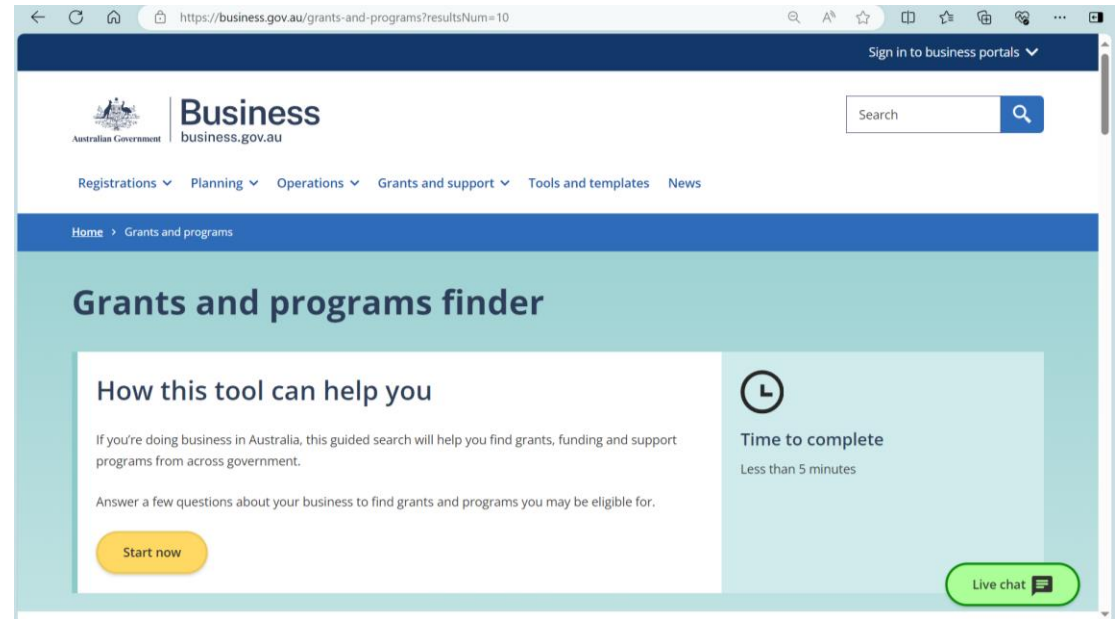
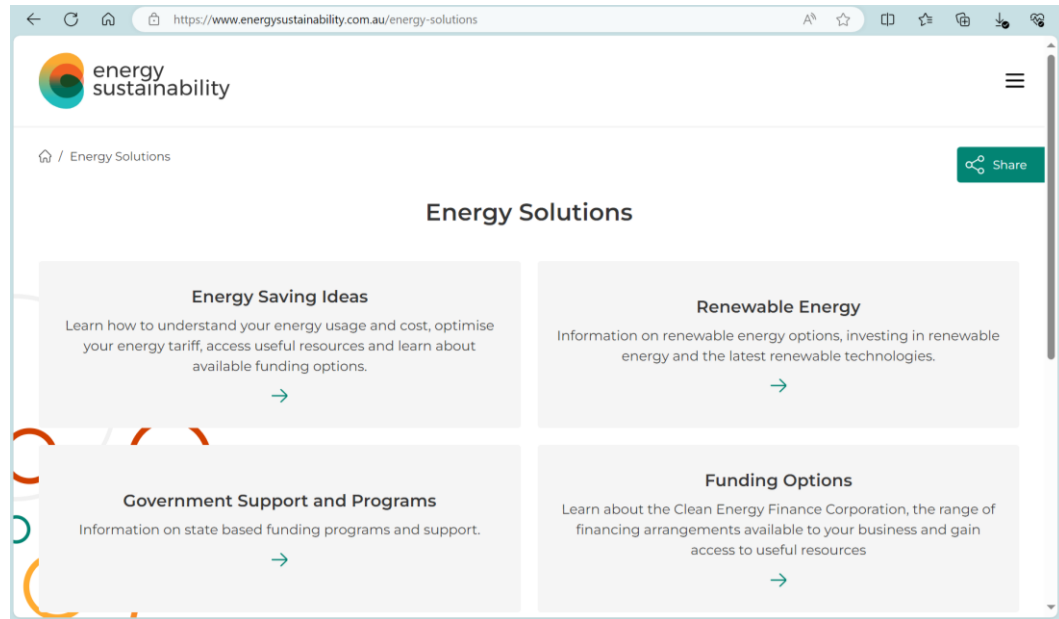
A proven model, that seems to fit the required transition well.

# Time to consider your business model





# Assistance – Decarbonisation



# ...and skills/training

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To successfully transition, training and skills need to focus at three levels:

- Board and Executive – Strategy
- Middle management – Execution
- Shopfloor – Enhancement

Start the journey!



Thank you

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