ABDC Climate Capabilities Report

March 2025

ABDC

Table of Contents

Executive Summary

Climate Regulation and Business Transformation in Australia

Australia's business landscape is undergoing significant transformation, driven by climate change policy reforms. Two key developments are reshaping corporate obligations and opportunities: amendments to the Corporations Act mandating climate-related financial disclosures, and the establishment of the Federal Net Zero Economy Authority to support economic transition. This report was developed in consultation with industry peak bodies to understand how they are preparing their members to contribute positively to climate action.

From January 2025, large entities will be required to prepare sustainability reports in line with the AASB S2 Climate-Related Disclosures Standard, with smaller entities phasing in until 2027. These requirements apply to listed and unlisted companies, financial institutions, superannuation entities managing over $5 billion, and entities covered under the National Greenhouse and Energy Reporting Act. The Australian Auditing and Assurance Standards Board will establish the assurance framework for these disclosures.

The newly established Net Zero Economy Authority will guide emissions-intensive regions through economic transitions, support workforce planning for clean energy industries, and align education systems with decarbonisation priorities. This initiative will impact entire supply chains, requiring businesses to adopt credible transition plans.

Climate risks vary across sectors, with physical risks (such as infrastructure damage and resource scarcity) and transition risks (such as market shifts and regulatory changes) affecting industries from finance to agriculture. Industry leaders highlight the urgent need for professionals skilled in climate risk and opportunity assessment, emissions tracking, carbon accounting and sustainable finance, and strategic adaptation planning.

High-demand skills include climate risk and opportunity assessment and disclosures, emissions tracking, ESG compliance, carbon accounting, technology and AI integration, circular economy expertise, and strategic leadership for climate adaptation. Significant skill shortages exist in carbon reporting, scenario analysis, clean energy technologies, climate data science, and sustainability management. Businesses are responding by complying with new climate regulations, investing in low-carbon technology and circular economy models, and embedding climate change considerations into core strategies. It is projected by the World Economic Forum that the green economy presents a $14 trillion opportunity by 2030, with growth in clean energy, sustainable transport, and climate technology.

This transformation is driving demand for specialised roles such as climate risk analysts, carbon accountants, and renewable energy specialists, as well as hybrid roles in finance, technology and innovation, corporate strategy and governance. Industry leaders recommend integrating climate and sustainability into business education through cross-disciplinary learning, real-world experiential training, and professional short courses. While traditional business skills remain valuable, they must be complemented by climate and sustainability expertise alongside transferable skills.

Background and Context

1.1 Business Education Preparing Graduates for Positive Climate Action – ABDC declaration

The Australian Business Deans Council (ABDC) recognises the irrefutable science that human endeavour since industrialisation has contributed to global warming. Business schools are vital in educating future business leaders about the new governance and risk management practices needed to transition the global economy to net zero.

To coordinate action, the ABDC's 38 members endorsed a Declaration on Climate Action in February 2022.

ABDC Declaration on Climate Action

Context

There is scientific consensus about the need for urgent action to rapidly reduce carbon emissions to net zero by 2050, if not before. Through the UN Framework Convention on Climate Change the international community is coordinating a range of measures including financing for adaptation, market and non-market mechanisms, and reporting approaches with the aim of reducing greenhouse gas emissions and limiting global warming in this century to 1.5 degrees. Business will play a critically important role in actioning these initiatives.

Business schools play a unique role through curriculum, research and engagement in shaping the new governance and risk management practices needed to transition the global economy to net zero. As the peak body for Australian business schools, the Australian Business Deans Council is positioned to coordinate and pursue a strategic approach to support climate action. The ABDC is committed to assisting business schools educate the next generation of business leaders about the importance of a net-zero future for Australia and conducting research to advance the Sustainable Development Goals, thus ensuring a sustainable and competitive business sector.

The Declaration was endorsed by members of the Council at the Annual General Meeting held on 25 February 2022.

Statement of accountability

Recognising the irrefutable science that human endeavour since industrialisation has contributed to global warming, and the role that business schools will play in global energy transition, ABDC member business schools commit to identifying opportunities to collaborate on the following in the 2022–25 period:

- Development of business school curriculum to embed carbon literacy in the Australian context, including working across disciplines to deepen students' understanding of the science of climate change
- Establishing education standards and identifying the threshold attributes of graduates to contribute positively to climate action

- Promoting programs of research and Centres of Excellence with a focus on business responses to climate change, including management and governance practices for a low-carbon economy, and financing models for mitigation and adaptation strategies
- Embedding a strategic partnership with the Australia-New Zealand Chapter of Principles of Responsible Management Education (PRME) to provide a forum for sharing of best practice and coordinating action
- Appointing a climate action fellow to co-ordinate ABDC member schools' actions and liaise with industry, the not-for-profit sector and government in pursuit of this agenda.

ABDC mission statement

The Australian Business Deans Council's mission is to make Australian business schools better. As the peak body, ABDC fosters the national and global impact of business education and research in Australia.

ABDC does this by:

- Being the collective and collegial voice of our member university business schools
- Providing opportunities for members to share knowledge and best practice
- Creating and maintaining strong, collaborative relationships with affiliated national and international peak industry, higher education, professional and government bodies
- Engaging in strategic initiatives and activities that further the ABDC's mission.

1.2 Summary of the peak industry bodies consulted

This report, guided by the accountability statement, aims to determine how Australian business schools can improve graduates' preparedness to operate more effectively in a net-zero economy. The report is based on consultations with the peak organisations of many industries relevant to business school graduates. The interviews provide insights into the professional knowledge, practices, competencies, and skills essential for fostering mitigation, adaptation, and resilience in a thriving net-zero economy.

Some transition models show that scenarios with a 1.5°C reduction are viable when emission reductions in sectors combine with sporadic changes in fossil-fuel-dependent industries.[1] What needs to be better understood from these macro models are the underlying impacts on work practices and occupations.

Some empirical studies estimate potential new jobs in the energy sector, but these predominantly relate to STEM professions.[2] Australian state and federal governments are developing workforce plans to emphasise

1 See for instance the One Earth Climate Model which shows a 1.5 reduction emissions pathways by sectors across: primary and secondary energy industries; the transport sector; chemical industry and textile and leather industry; water utilities, fisheries, agriculture and forestry; aluminium, cement, and steel industries; building sector): https://www.unepfi.org/industries/investment/one-earth-climate-model-sectoral-pathways-to-net-zero-emissions/

2 See for instance the: Climate Works, Climate-KIC and CSIRO report which predicted creation of up to 1.35 million jobs from the heavy industry energy transition across five supply chains (iron and steel, aluminium, other metals, chemicals, and liquefied natural gas (LNG)) https://energytransitionsinitiative.org/wp-content/uploads/2023/02/Pathways-to-Industrial-Decarbonisation-report-February-2023-Australian-Industry-ETI.pdf and https://energytransitionsinitiative.org/wp-content/uploads/2023/02/Skilling-Australian-industry-for-the-energy-transition-February-2023-Accenture-report-for-Australian-Industry-ETI-phase-3.pdf however these reports focus on technical skills (predominantly STEM-related); International Labour Organisation, skills for decarbonisation report: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---ddg_p/documents/publication/wcms_858025.pdf

regional development and growth of the low-carbon energy sector. However, for a net-zero economy, there needs to be a greater focus on energy transitions and broader industry transformations in the occupations most frequently employing business graduates.

In this report, we aim to guide the development of business education standards and identification of the threshold attributes of graduates to contribute positively to climate action.

We do this by aligning anticipated changes in work resulting from:

- Climate mitigation – the direct transition away from carbon-intensive industries and practices to limit warming
- Adaptation – adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- Resilience – anyone integrating information about climate change conditions into their work practices.[3]

The consultation revealed how peak bodies are preparing their memberships to respond to climate change and what they think business schools should do to help graduates contribute positively to climate action. (See Consultation Questions in Appendix 1).

The table below outlines those who accepted the invitation to participate in the consultation.

Industry division	August 2024 employed persons (trend)	Industry body consulted	Cross-sectoral bodies consulted
Agriculture, Forestry and Fishing	328,505	National Farmers Federation	Australian Chamber of Commerce & Industry Australian Industry Group Deloitte Edge Impact Global AFAANA ESG Special Interest Group Climate Leaders Coalition UN Global Compact Network Australia Climate Action Network Australia
Mining	300,519	Mineral Council of Australia	
		AiGroup	
Manufacturing	897,158	AiGroup	
Electricity, Gas, Water and Waste Services	207,021	AiGroup	
Construction	1,328,121	AiGroup	
Wholesale trade	382,437		
Retail trade	1,342,739		
Accommodation and Food Services	969,900	Australian Hotels Association	
Financial and Insurance Services	526,778	Financial Services Council	
		Australian Sustainable Finance Institute	
Professional, Scientific and Technical Services	1,326,560	Chartered Accountants Australia and New Zealand (CA ANZ)	
		CPA Australia	

3 There are no specific classification codes for adaptation and resilience jobs as any professional across all occupations may engage in such activities and make use of the requisite skills and capability sets

Education and training	1,243,878	Academy of International Business Sustainability Shared Interest Group	
		Accounting and Finance Association of Australia and New Zealand ESG Special Interest Group	
		Monash Sustainable Development Institute	
Employed total	**14,486,858**		

The information contained in this report draws on the combined views gathered during that consultation process.

1.3 The Role of Business Schools

Australian university business schools teach and research the areas vital to the success of the businesses that underpin Australia's economy.

As their peak body, ABDC's role is to ensure that those with political, social, cultural and economic influence appreciate and support how business education contributes to Australia's future.

Australian university business schools educate 16% of all domestic students and 36% of the nation's international students.

1.4 Significant Policy Drivers for Industry and Higher Education

The policy landscape is dynamic. Two significant legislative changes are currently influencing Australia's regulatory context for climate action.

Changes to the Corporations Act 2001 (Cth)

Australia is entering a new era of corporate sustainability reporting. This comes when there is alignment of international frameworks under the International Sustainability Standards Board (ISSB) and reporting and disclosures under the International Financial Reporting Standards (IFRS). In September 2024, amendments to the *Corporations Act (2001)* mandated certain large entities (listed, unlisted and certain not-for profits) to prepare a sustainability report which include a climate statement.

For Group one entities (larger entities), this began for reporting periods beginning on or after 1 January 2025. Implementation for Groups two and three (smaller entities) will begin in 2026 and 2027 respectively. The climate statement is to be prepared in accordance with the Australian Accounting Standards Board (AASB) *S2 Climate-related disclosures* Standard.

The climate statement must be assured by the financial statement auditor. The assurance standard and timeline for assurance have been issued by the Australian Auditing and Assurance Standards Board (AUASB).

Reporting entities included in the ASRS

Large entities that are required to prepare and lodge annual reports under Chapter 2M of the Corporations Act will be required to disclose information about climate-related risks and opportunities. This includes listed and unlisted companies and financial institutions as well as registrable superannuation entities and registered investment schemes.

Large entities are defined using size thresholds equivalent to the existing *Large Proprietary Company* definition. This threshold will apply to both listed and unlisted companies.

Reporting by large entities will provide transparency to shareholders and support the efficient allocation of capital aligned with risks and opportunities.

Asset owners (such as registrable superannuation entities and registered schemes) will be considered large if funds under management are more than $5 billion. Reporting by asset owners will support consistent reporting of climate-related risks and opportunities across the financial sector, noting the significance of these entities in Australia's financial system.

Where entities are subject to both the annual reporting requirements under the Corporations Act and emissions reporting obligations under the National Greenhouse and Energy Reporting Act 2007 (Cth) (NGER Act), they will be required to disclose regardless of size.

Reporting by NGER-covered entities is appropriate and proportionate to the risks they face. SOURCE: Australian Treasury - Mandatory climate-related financial disclosures: https://treasury.gov.au/sites/default/files/2024-01/c2024-466491-policy-state.pdf

ASIC chairman Joe Longo described the ASRS changes as the 'biggest change to corporate reporting in a generation'.[1]

> *As more people consider environmental sustainability when making financial decisions, climate disclosure will continue to grow in importance. Enhanced climate disclosure will also benefit reporting entities themselves, enabling them to better understand their climate-related risks and opportunities over the short, medium and long term.*[2]
>
> Commissioner Kate O'Rourke, Australian Securities and Investments Commission

The changes will have the most immediate impact on the accounting profession, which will be involved with the measurement, reporting and assurance of information on climate-related risks and opportunities as well as greenhouse gas emissions across:

- The business operations (Scope 1)
- Purchased electricity (Scope 2)
- Entire value chain (Scope 3).

Finance professionals will be called upon to interpret climate information to assess relevant market risks and opportunities, especially to forecast how different climate outcomes could affect an organisation's financial performance. Numerous functions and roles that serve as typical business graduates face significant changes, as elaborated in this report.

The Australian Chamber of Commerce and Industry (ACCI) says very few accountants and consultants have the knowledge and skills to prepare and assure sustainability reports. So, within a very short time, there will need to be rapid upskilling to meet those demands. Chartered Accountants Australia and New Zealand (CA ANZ) notes that professional accountants have transferrable skills for sustainability reporting and assurance and are now building their knowledge of the new standards and requirements. As the requirements are phased in over a few years, this will enable the profession to build the necessary capability.

Establishment of the Federal Net Zero Economy Authority

The Authority, which was established on 9 September 2024, has a renewed focus on specific sector pathways to:

- Enable better workforce planning in clean energy and low-carbon activities, particularly in regional areas
- Embed workforce planning in sector plans, with governments working with businesses to prioritise workforce diversification and ensure a fit-for-purpose education system.

The Authority will facilitate investment in new industries and jobs, particularly in emissions-intensive regions.

The Authority's broad remit demonstrates that the challenge ahead extends beyond the accounting, finance, and governance professions. It will require strategic decarbonisation targets, credible transition plans, and the implementation of business transformation plans across entire supply chains.

1 https://www.afr.com/companies/professional-services/commuters-captured-under-tough-climate-regime-20231022-p5ee2v

2 https://asic.gov.au/about-asic/news-centre/find-a-media-release/2024-releases/24-205mr-asic-urges-businesses-to-prepare-for-mandatory-climate-reporting/

Impacts of Climate Change on Business

Climate change is a primary factor shaping the future of business. It is causing immediate and long-term impacts across all industries, although physical and transition effects vary widely.

Certain industries have higher exposure to physical risks. Physical changes resulting from damage to resource supplies, disruptions to power and water supplies, destruction of property and infrastructure, and those in high-climate-risk areas directly influence capital and operational vulnerabilities.

> *Worsening extreme weather events, expansion of development in high-risk areas, growing asset values, and higher inflation in the construction sector are putting upward pressure on insurance affordability in Australia and globally.*
>
> Insurance Council of Australia

For others, **the most material impacts may be transition related**. These arise from changes in market demand and reputational risks, introducing lower-carbon production technologies and renewable energy sources, or new regulatory or legal requirements like mandated disclosures or carbon pricing.

The risks are existential for some sectors, especially fossil fuel extraction and dependent industries.

Others face significant disruptions, such as interruptions to supply chains or extreme weather affecting primary production. The finance and insurance sectors grapple with fundamental instability, capital market risks, and losses across global systems.

> *Climate change is already having a significant impact on the financial services sector, with effects that will only increase over time. These impacts will change the nature of investment and the regulatory environment in which companies operate.*
>
> Financial Services Council

Immediately Impacted Sectors

2.1 Effects of Climate Change on Membership by Sector/Industry

Climate change is now considered a critical issue, although the impact varies among the Australian industries consulted.

1. High-Emission Industries: Major emitters face existential threats within the next decade. This is crucial for aligning capital investments with long-term climate goals. Companies must work towards zero-emission or clean-economy business models. (United Nations Global Compact)

Those involved in transition especially are:

- **Finance:** The finance sector is advancing from merely avoiding fossil fuel investments to actively supporting decarbonisation, carbon capture use and storage, and investment in sustainable assets and projects. (Climate Leaders Coalition)
- **Other Sectors:** Decarbonisation and energy transition (Minerals Council). Some businesses are challenged with complexities, such as Scope Three emissions reporting, while balancing priorities among customers, employees, and sustainability goals. (Climate Leaders Coalition)

2.1.1 Immediately Impacted Sectors – Physical Impacts

The physical impact of climate change is evident across all industries, except some service sectors. Rising temperatures, ocean warming, and more frequent and intense extreme weather – such as intense heat events, droughts, wildfires, intense storms, floods, and sea-level rises – disrupt businesses.

According to the World Economic Forum:

> *Climate Change has caused over $3.6 trillion in damages since 2000 and, while urgent and immediate action could have positive effects on GDP, inaction would affect global GDP, which could drop by 22% cumulatively by 2100.*

- **Agriculture, Finance and Construction:** Extreme weather events like floods and droughts are causing significant disruptions. For example, changing climates affect agricultural production through lower and unpredictable yields, while rising insurance costs hit construction in high-risk areas. (Edge Impact, Insurance Council of Australia)
- **Mining, Extraction and Processing:** Electrification of heavy industry processes and investment in battery technologies is leading to significant increases in demand for copper, lithium, nickel, and aluminium and a focus on reducing emissions across value chains. (Minerals Council of Australia)
- **Tourism and Infrastructure:** Rising water levels and extreme weather cause damage to public infrastructures and properties and affect travel and tourism, especially in vulnerable locations like the Great Barrier Reef. (Academy of International Business Sustainability, CA ANZ)
- **Trades and Outdoor Professions:** Heatwaves and extreme weather pose risks to trades, like tiling and other outdoor professions in hot climates. (Climate Action Network Australia, National Farmers Federation)
- **Livestock and Crops:** Perennial crops, like vineyards, need long-term climate adaptation. Livestock faces risks of bushfires and disease. (National Farmers Federation)

2.1.2 Transition and Adaptation Impacts

There is significant variation in the adaptation strategies of industries transitioning towards Net Zero. A recent World Economic Forum report estimates green technologies will grow to a $14 trillion market by 2030, especially in alternative energy, sustainable transport and consumer products.

- **Low-emission industries:** Adaptations are mostly external with minimal internal restructuring. The changes affect operating capital through shifts in energy usage or transport. (AiGroup)
- **New financing mechanisms for energy:** Power Purchasing Agreements (PPAs) are a central focus, especially in hospitality and other service industries. (Minerals Council of Australia, Australian Hotels Association)
- **High-impact sectors:** Industries like fossil fuel extractive industries, electricity production, metals, and transportation will undergo major transformations as they transition to renewable energy and electrification. (Minerals Council, AiGroup)
- **Finance:** Financial institutions will increasingly focus on risk management and climate-related opportunities, such as capital allocation for climate solutions. New regulations are driving these changes, impacting capital investment and operational costs. (Australian Sustainable Finance Institute, Financial Services Council)
- **Accounting:** Climate change is transforming corporate reporting, especially through mandatory climate-related financial disclosures. Accountants are building their knowledge of the new requirements in carbon accounting, reporting, assurance, and management. (CPA Australia, CA ANZ, Deloitte)

2.2 Type of Response – Drivers

The responses to climate change differ across sectors as they depend on physical or transitional drivers and the need for mitigation or adaptation.

Businesses are bolstering teams for scenario analysis, risk assessment, and greenwashing mitigation. Their approaches vary, with some focusing on immediate operational challenges and others engaging in strategic planning for long-term resilience. (United Nations Global Compact Network Australia)

2.2.1 Differences by Time and Place

Industries recognise that climate change impacts are immediate and ongoing. They view the journey as progressive rather than sudden. Short-term threats demand immediate action, but there are also medium- and long-term opportunities for businesses to adapt effectively.

- **Short-term (within a decade):** Frequent droughts, floods, and other climate risks will increase. The financial sector is now deeply involved in emissions reporting, with upcoming legislation mandating climate-related disclosures by 2025. (Edge Impact, Australian Sustainable Finance Institute, CPA Australia)
- **Medium-term (next decade):** A shift to renewable energy and reduced coal reliance is expected, along with challenges in land use for renewable projects. (Insurance Council of Australia)
- **Long-term (to 2050):** By 2050, industries must achieve net-zero emissions to mitigate extreme weather impacts. This will significantly reshape public health, housing, and transport systems. (Insurance Council of Australia, Edge Impact)

Regional differences add complexity. For example, industries near coastlines or in high-risk rural and regional areas face unique physical challenges, such as rising sea levels and fire-prone conditions that require targeted local adaptation strategies.

2.2.2 Opportunities across all sectors

All sectors highlighted the business opportunities arising from transition and adaptation. Some common opportunities were:

- **Low-carbon transition**: New low-emission product and service development and new mobility services. These include zero-emission transportation systems and associated markets supporting the transition like carbon markets, as well as minerals and metals for conduct and transmission, and technology and AI integrations for energy and product solutions that responsive to demand and physical climate change risks
- **Green economy (low-carbon, resources-efficient and socially-inclusive) products and services**: Includes low-carbon and energy productive goods and services; sustainable finance; green economy metal and minerals extraction and production; renewable and clean energy production; and nature based solutions and environmental conservation
- **Climate resilience and adaptation**: New infrastructure design and construction to resist physical impacts of climate and new business models. (These include tourism in ski areas during summer, reef restoration, adaptive agritech solutions like grazing innovation technologies and new feedstocks etc)
- **Circular economy and nature-based solutions**: Productive use and reuse of materials, energy and water in closed-loop production and consumption value chains. Product as service solutions, built-to-last products and services, biobased materials manufacturing and new products, regenerative agriculture and restorative business.

Defining Business Graduates Who Contribute Positively to Climate Action

Recent industry reports indicate upward trends for:

Green skills are in high demand. The hiring rate for workers with at least one green skill is 29% higher than the workforce average. However, analysis shows a gap in skilled workers.

> *The five-year annualised growth rate between 2018 and 2023 reveals a similar trend. The share of green talent grows by 5.4% per year over that period, while the share of jobs requiring at least one green skill grows by 9.2%.*[1]

> *The past two years has been a period of green growth in labour markets. In 2023, the World Economic Forum's 'Future of Jobs' report emphasised that 'green roles' were outpacing overall hiring rates, with roles like sustainability managers and analysts featured as the fastest-growing roles.*[2]

Sustainability professionals, especially in finance, legal, procurement and marketing and communications. The most significant increase is in the finance and legal sectors. The *State of the Sustainability Profession study*[3] shows companies are more likely to hire new full-time staff over increasing their use of consultant professional services. Studies have outlined the skills gaps in the industries that support energy transitions, such as finance professionals[4]. MBAs are not required across all sustainability positions, those in higher-level roles are more likely to have university certifications.

While showing the increasing demand, our consultation with Australian peak bodies details capabilities and roles within domestic markets[5]. It highlights what is required for business schools to prepare graduates who can contribute positively to climate action

1 https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/global-green-skills-report/green-skills-report-2023.pdf

2 https://www.weforum.org/stories/2023/04/future-of-jobs-is-green-2023-climate-change-labour-markets/

3 https://trellis.net/report/the-state-of-the-sustainability-profession-2024/

4 See for example the Institute for Sustainable Futures and CSIRO study: https://www.uts.edu.au/sites/default/files/2022-10/Advancing%20climate%20skills%20in%20the%20Australian%20financial%20system%20FINAL_0.pdf

5 The sections that follow are a summary of the skills and capabilities that were mentioned across the consultation.

3.1 In-demand Skills and Capabilities

Many skills and capabilities to equip a graduate to act positively on climate change are aligned to the typical technical and transferable skills assured in business degrees. Table 3.1 provides a summary of skills identified in the consultation.

Technical Skills	Transferable Skills
Accounting Finance Business Analytics Compliance and Risk Management Sustainability and Environmental Management Corporate Social Responsibility (CSR): Compliance expertise, ESG integration Energy Management Supply Chain and Operations Information Technology and Innovation Sustainable Technology Engineering Management Operations Management Project Management Career Development and Mobility Risk Management Sustainability Climate Literacy	Critical Thinking and Complex Problem-Solving Strategic and Entrepreneurial Thinking Communication and Storytelling Responsible Leadership and Management Adaptability and Flexibility Interpersonal and Teamwork Environmental and Sustainability Awareness Cross-functionality Technology and AI proficiency

The skills in the table complement calls for business schools to do more to address the climate crises through their expertise in business transformation, operations and supply chains, measuring performance and return, incentives and governance, market design, organisational leadership, marketing and consumer behaviour.

Other more specific climate and sustainability technical skills were identified. These include:

- Climate scenario risk assessment and forecasting
- Carbon inventory assessment and accounting
- Ecological and carbon footprint assessment
- Carbon credits, certification assessment and trading
- Net Zero transition pathway costing and planning
- Net Zero business model assessment and investment
- Decarbonisation strategy and credible implementation planning
- Marginal abatement cost curve
- ESG cost-benefit analysis
- Climate impact assessment
- Forward-looking climate and sustainability statements
- Renewable energy and clean technology expertise and management

- Supply chain sustainability analysis
- Circular economy
- Sustainable finance and climate vulnerability assessment
- Adaptation opportunity assessment
- Preparation and audit of climate-related financial disclosure statements
- Net Zero transition pathway costing and planning
- Corporate governance design for net zero
- Physical risk assessment and adaptation opportunity assessment
- Just transition planning and social impact analysis

Typical business acumen skills – critical thinking, data analysis, communication, and collaboration – are repurposed for carbon compliance assessment, decarbonisation strategies, and transition or adaptation solutions.

Professional skill gaps are often viewed as interconnected capability sets rather than isolated skills. For example, complex problem-solving abilities frequently overlap with other skills, particularly in assessing impacts and developing adaptation and transition strategies.

The table below synthesises the most frequently mentioned skill and capability sets.

Table 3.1 Interconnected Skills and Capability Sets for Making Positive Climate Action Contributions

Skills and Capabilities	Purpose for Climate and Sustainability	Interconnected Capabilities
Complex problem solving and adaptive thinking	To understand, analyse and adapt to the broader systems in which businesses operate Application of systems thinking and analysis of systems dynamics Strategic decision making in a VUCA world (volatility, uncertainty, complexity, and ambiguity)	Ability to: • Assess the impact of their actions on the environment and society • Apply system dynamics to global societies and economies and ecosystems (land, oceans, carbon and water cycles and interdependencies) to assess individual and organisational impact with those system dynamics, avoid negative impact and reduce harm • Interpret information and make data-informed decisions when the circumstances are ambiguous and/or the answer is not clear • Rapidly adapt, manage risks, and identify opportunities in a fast-changing environment

Skills and Capabilities	Purpose for Climate and Sustainability	Interconnected Capabilities
Critical thinking	Form judgments by assessment of issues and information arriving from multiple perspectives Incorporate diverse stakeholder perspectives	Ability to: • Critically assess net-zero strategies in relation to stakeholders and the environment • Generate new ideas and analyse complex, interconnected problems from a multidisciplinary perspective. This highly valued ability includes considering the broader social impacts of processes, their relationship with technical and regulatory developments and potential unintended consequences
Negotiation and collaboration	Identification of opportunities for collaboration with diverse stakeholders and across value chains Managing cross-functional or multi-stakeholder collaborations Ability to negotiate climate compliance or innovation solutions across teams, functions and value chains	Ability to: • Navigate across multiple disciplines and stakeholder interests to bridge gaps and implement sustainable changes • Work with a broad range of business functions to align, collaborate and share data for climate transition planning • Influence internal stakeholders and customers to adopt more sustainable practices • Identify opportunities, manage risks, and communicate change across organisations will be critical to navigate the transition to a clean economy • Implement strategies for emission reductions and climate adaptability across the supply chain • Negotiate and manage long-term energy contracts like Power Purchase Agreements (PPAs)
Leadership	Mindset shift Transformational leadership Responsible leadership Entrepreneurial leadership	Leadership ability to: • Apply an entrepreneurial spirit to energy transitions • Apply foresight and long-term thinking in decision making to transform business and value chains aka a whole-of-organisation approach to net zero by embedding climate transition planning across business operations, systems, processes and culture

Skills and Capabilities	Purpose for Climate and Sustainability	Interconnected Capabilities
Communication	External and internal stakeholder communication Cross-cultural, cross-functional and inter-disciplinary communication Narrative, data storytelling	Ability to: • Understand sustainability concepts • Effectively communicate to communities and back into organisations. With engineers and the environmental scientists, communicating complicated information in language communities understand, without talking down to people • Provide decision useful information, including qualitative and financial aspects, to navigate the transition to a clean economy • Fill client-facing roles and have technical and credible conversations about climate transition plans and pathways • Craft the story of an organisation's transition and its impact on financial statements • Communicate complex climate-related concepts to internal stakeholders including managers, executives and boards • Communicate the organisation's climate transition activities to stakeholders including customers, boards and investors
Entrepreneurship and Innovation	Innovation and entrepreneurship Intrapreneurship and capacity to integrate new business models into existing businesses and transform chains Developing new and emerging technologies	Ability to: • Be flexible and apply entrepreneurial decision making • Integrate new business models into the culture and the practicalities and processes of a large company • Identify, develop and implement climate-related innovative solutions that enhance efficiency and sustainability • Apply business analytical skills in innovative ways to address climate challenges, disasters and crises

Skills and Capabilities	Purpose for Climate and Sustainability	Interconnected Capabilities
Data and Analytical Technical skills	Data literacy Data analysis, modelling and query (with AI and machine-learning integration) Financial modelling Management accounting skills Business analysis and processes for compliance assessment Scenario Planning	Ability to: • Demonstrate progress against climate goals • Assess financial flows and impact and think about the transformative role of finance and how it's deployed for the beneficial outcomes • Plan and cost the transition to a lower carbon state • Be aware of new developments in technology and innovative applications in financial markets • Navigate legislative and regulatory policy for climate and sustainability compliance • Assess and adapt to different future scenarios • Assess technology and innovation opportunities in designing new ways of working and processes

Skills and Capabilities	Purpose for Climate and Sustainability	Interconnected Capabilities
Technical skills-climate specific	Risk assessment of climate scenarios and forecasting Carbon inventory assessment and accounting Ecological and carbon footprint assessment Carbon credits, certification assessment and trading Net-zero transition pathway costing and planning Decarbonisation strategy and credible implementation planning Marginal abatement cost curve Environment, Social and Governance (ESG) cost-benefit analysis Climate impact assessment Expertise in renewable energy, clean technology and management Supply chain sustainability analysis Circular economy Sustainable finance	As carbon emissions become a variable to manage, skills in carbon trading and accounting will become increasingly important Graduates will need the ability to: • Navigate the complexity of climate impacts and make informed decisions in a net-zero economy • Verify and audit climate benefits • Align business decisions and investments with a 1.5-degree world • Bridge technical and commercial aspects. There will be high demand for those who can understand the technical constraints and business implications • Analyse energy-efficient technologies, renewable energy systems, and define potential future technologies like battery storage, advanced geothermal energy, green hydrogen production, and offshore wind • Manage advanced energy-efficient technologies like smart lighting, HVAC systems, and energy modulators • Analyse energy usage data to optimise consumption and reduce waste • For green steel production, renewable hydrogen creation and electric vehicle maintenance
Corporate reporting and disclosures	Assessment, measurement and reporting on sustainability criteria Integrated ESG assessment, disclosures and reporting Climate risk management	Ability to: • Analyse performance against stated ESG objectives and decarbonisation pathways • Ensure compliance with regulatory and reporting frameworks and consider the broader social impacts of processes and their relationship with technical and regulatory developments, including anticipation of unintended consequences • Adapt reporting and assurance to rapidly evolving sustainability regulations and standards

Skills and Capabilities	Purpose for Climate and Sustainability	Interconnected Capabilities
Project, process and change management	Strategic project skills Large-scale project management Change management for sustainability transitions Cross-functional team management Behavioural change	Ability to: • Develop and implement electrification processes and evaluate and value options, particularly in uncertain technological landscapes • Comprehend and integrate climate risks and opportunities into business strategies • Manage the large-scale projects that are part of the clean energy transition • Integrate AI-driven project management tools to enable faster and more efficient workflows in construction and energy projects • Strategic thinking about the long-term horizons and global economy opportunities for seeking net-zero global emissions • Drive organisational change and build climate/sustainability-focused cultures • Change HR, capital and investment, and strategic decision-making systems with deep climate, climate science and climate risk expertise • Integrate sustainability into core business strategies and drive change across value chains • Implement new clean energy technologies and sustainability projects • Navigate cross-functional teamwork and leverage new technological tools to handle sustainability-related tasks
Ethics, integrity and values-based decision making	Assessment and discernment of credible information Ethical decision making for avoidance of greenwashing	Ability to: • Prepare robust, reliable information and adhere to a professional codes of ethics • Discern and justify rapid adaptation plans if mitigation fails

Skills and Capabilities	Purpose for Climate and Sustainability	Interconnected Capabilities
Policy analysis		Ability to: • Analyse strategic decisions at the intersection of economics, energy security, climate, and geopolitical risk • Navigate legislative and regulatory policy for climate and sustainability compliance
Circular economy and systems analysis	Complex systems analysis Behaviour change and advocacy Systems dynamics	Ability to: • Identify circular opportunities in supply and distribution chains • Develop viable circular economy business models, production and consumption systems • Manage circular value chains and processes
Adaptation and risk strategy	Risk Management Climate adaptation strategy development Adaptability, agile and flexible mindset	Ability to: • Analyse global implications and policy for environment adaptation and mitigation efforts • Integrate foresight and resilience into strategic planning • Future-proof investment and infrastructure decisions • Assess medium and long-term adaptation risks • Introduce flexibility in strategic pathways to enable rapid responses to climate risks
Climate and environmental science	Environmental awareness Climate science	Ability to: • Integrate scientific and engineering expertise into electrification, renewable energy and fugitive emissions management • Understand science principles behind carbon quantification and global warming potential to estimate transition planning and risk assessment • Integrate climate science into operational organisation strategies

3.2 New Roles and Capabilities

New roles emerge primarily to service two in-demand areas: technological advancement and climate change response (especially net-zero transitions and adaptation).

Existing roles are becoming increasingly hybrid, reflecting the growing need for cross-functional capabilities overlaid with climate and sustainability knowledge.

Roles that grow in importance are mainly those with skills in specific sustainability-related expertise, especially in organisational and business decision-making.

3.2.1 Climate Specialist Roles

- **Climate adaptation specialists, renewable energy project developers**, and **continuous carbon offset project managers** emerge
- **Climate business analysts** measure, monitor, and manage carbon emissions, develop and implement carbon reduction strategies, manage carbon credits and comply with carbon regulations
- **Sustainability supply chain analysts** integrate climate and sustainability into teamwork and data collection
- **Renewable energy coordinators** source and manage renewable energy supplies
- **Energy data analysts** specialise in energy consumption patterns to identify areas for improvement
- **Customer engagement managers** focus on aligning services with evolving customer expectations regarding sustainability
- **New roles in clean energy and sustainability auditing** are created, especially around climate reporting and the net-zero transition
- **Green industries** grow such as renewable energy and hydrogen production
- **Carbon and biodiversity extension officers** are created to help farmers understand and engage with emerging climate-related markets
- **Chief circularity officers** become more common as companies focus on circular-economy principles
- **New business developments require new roles** in, for example, value chains that incorporate carbon sequestration or nature regeneration.

3.2.2 Data, Digitalisation and AI Roles

- **Climate data scientists and analysts** manage and interpret large data sets for trend analysis, risk assessment, and predictive climate modelling
- **Advanced actuaries** require stronger statistical analysis, machine learning, and predictive modelling skills
- **AI specialists and machine-learning engineers** develop and maintain AI systems and design algorithms for underwriting, claims processing, and fraud detection
- **Cybersecurity experts** are essential for protecting sensitive data and ensuring compliance as digital transformation increases
- **Digital marketers** are needed to implement digital marketing strategies in a competitive market.

3.2.3 Hybrid Roles

- **Professionals with a combination of climate, scientific, technical and traditional insurance skills** in high demand
- **Climate investment experts** tasked with making investment decisions need the capability to identify opportunities and risks from climate impacts to deliver long-term returns
- **Regulatory experts** navigate the evolving global regulatory landscape and ensure compliance in and across local regulatory regimes
- **Cross-industry mobility workers** can transition between industries as climate effects come into play. This requires training in recognising and applying transferable skills
- **New roles emerge in areas like renewable energy infrastructure and climate risk assessment**. For example, mechanics specialise in electric vehicles; planners and business development professionals structure power purchasing agreements; and innovation experts who understand green hydrogen production.
- **Farmers and agricultural professionals with new skills in carbon accounting, climate risk assessment, and adaptation strategies** for their specific sectors in areas like switching crops, carbon sequestration and mitigation of methane emissions.
- **Accountants with narrative and storytelling abilities** to help craft the factual and evidence-based accounts and stories of an organisation's net-zero transition and connect these with the associated risk and opportunity impacts on financial statements.

3.2.4 Increased Importance

- **Roles focused on sustainability reporting, carbon accounting, and climate risk management**, ESG analysts and renewable energy experts continue to grow
- **Sustainability consultants with specialised knowledge in specific industries or functional roles**. For example, experts to advice on integrating sustainable practices into hotel business operations
- **Sustainability officers within supply chains** are increasingly important in agriculture and food value chains and have vital skills in climate science and market economics
- **Management accounting skills** are crucial for planning and costing the transition to a lower carbon state, understanding trade offs and incorporating climate into decision-making processes
- **Data scientists and analysts** are increasingly important as the amount of data on sustainability grows with mandatory climate reporting.

3.3 Skills in Short Supply

Many peak industry bodies note skill shortages in trades and other technical occupations, like electricians and engineers, that are essential to the energy transition.

This section focuses on the skills those consulted see as most relevant for business school graduates.

Financial services peak bodies say there is a growing need for technical skills in AI, machine learning integration, emissions analysis, and reporting.

- Global technological advancements are reshaping sustainability skill requirements in this sector, with AI, automation, and digitalisation driving transformative changes
- However, there are significant shortages in data analysis, advanced analytics, AI, machine learning, and cybersecurity expertise. Technical capabilities around emissions reporting, especially Scope Three emissions, are in high demand
- The industry also needs more professionals skilled in systems thinking and interdisciplinary collaboration, which are currently uncommon in this sector.

Accounting professional bodies emphasise the demand for graduates who can practically apply sustainability principles in business.

- Accountants prepared to handle the reporting, disclosure and assurance requirements of new climate-related financial disclosure legislation and market regulation are particularly desirable.

Professional services report critical shortages in climate and sustainability expertise.

- Key deficit areas include professionals capable of developing ESG frameworks, integrating climate risk into finance, and implementing strategic business integration
- There are acute gaps in carbon accounting, climate-related financial disclosures and reporting, scenario analysis, resilience planning, data analysis, and risk management
- To address these needs, the sector demands short, practical training courses
- Current shortages also exist in climate science roles, and there is increasing demand for expertise in sustainability reporting, finance, and climate risk.

Industry groups identify critical shortages in roles related to clean energy transitions.

- There is an urgent need for skilled workers in this area and clearer policy frameworks and roadmaps to guide skill development in a net-zero economy
- Business climate capabilities, particularly knowledge of internal carbon pricing and differential discount rates, and expertise in circular economy business models and nature-based solutions are in high demand
- Sustainability reporting skills, especially around Scope Three emissions, are increasingly essential
- Organisations need professionals who can navigate the complexities of renewable energy solutions, including Power Purchase Agreements (PPAs) development and risk assessment, which combine business acumen with energy expertise
- There is also a growing demand for professionals skilled in using carbon calculators and assessing carbon market risks and opportunities.

Balancing Business and Climate Knowledge

4.1.1 New Jobs or Part of Everyone's Work?

Creating new jobs and developing climate and sustainability skills in existing roles is essential. Even Chief Sustainability Officers (CSOs) and sustainability professionals are seeing their roles evolve with mandatory climate-related financial disclosure legislation.

Some people see climate change as integral to everyone's work. Technical foundational skills and professional roles may stay similar, but the focus will shift toward achieving positive climate outcomes. This shift opens opportunities for graduates skilled in analysing and integrating climate data, interpreting climate science, performing climate change risk assessment and scenario analysis, developing effective sustainability reporting frameworks, managing climate risk, applying strategic thinking, and embedding sustainability across business functions.

For example, while traditional financial analyst skills remain relevant, graduates who can mobilise investment capital and structure finance for net-zero transitions and climate adaptation will find improved career pathways. Demonstrating the financial returns on investments in decarbonisation or carbon intensity reduction processes and new technologies will be critical for investors and financiers.

Similarly, HR professionals who can create incentives, foster climate-focused organisational cultures, and promote climate-resilient thinking will have new opportunities.

Accounting specialists can offer cross-functional expertise by integrating climate data, guiding financial decisions, and creating balanced scorecards that evaluate climate model limitations.

Management graduates can pursue sustainability consultants and climate analyst roles, create roadmaps, resilient strategies, and actionable transition plans.

The core opportunity is combining technical, sustainability, and change management skills to leverage technology and innovation to address climate and ESG challenges. Adaptability and a commitment to continuous learning will be crucial.

Chief Sustainability Officers (CSOs) and their teams must speak the language of business and integrate business functions. In some large companies, the responsibility for external sustainability reporting is moving to finance. This enables CSOs to focus on large-scale change and transformation. Teams in large corporations need to know how to collect and assess data across organisations and then inform finance of opportunities to transform or advance sustainability.

Graduates who understand sustainability within the broader business context, rather than as a siloed issue, will help make businesses more adaptive and agile.

4.1.2 Emerging Roles in Climate and Sustainability

Other emerging roles include:

- **Climate and sustainability-integrated business strategists:** Experts who evaluate stakeholder positions, adjust strategies in response to changing standards, lead organisational change, and build cultures focused on sustainability
- **Chief circularity officers:** Responsible for developing circular economy opportunities across the business, value chain, and markets
- **Sustainability intrapreneurs:** Professionals with climate and energy management expertise who drive innovation across business operations and value chains
- **Roles combining climate, geopolitics, and energy security:** Individuals capable of assessing climate risks, such as the impact of extreme weather on physical assets, business operations, supply chains and markets
- **Sustainability focused data scientists and technology specialists:** Professionals who develop innovative technology solutions for sustainability data management, risk assessment, predictive modelling, and financial reporting and decision-making
- **Carbon and sustainability accountants, auditors and actuaries:** Experts in tracking carbon inventories, merging climate and financial reports, measuring sustainability KPIs, doing statistical analysis, machine learning, and predictive modelling. They will also build and maintain AI systems for underwriting, claims processing and customer service
- **Cybersecurity specialists:** Skilled professionals who manage cyber risks, especially as digital transformation advances. Insurance companies need skilled professionals to protect sensitive data and ensure regulatory compliance
- **Climate Risk and Scenario Analysts:** Finance and economics experts who conduct scenario analysis, model financial impacts, and assess climate risks
- **Carbon and Biodiversity Extension Officers:** Professionals supporting SMEs, particularly primary producers, who engage with emerging climate-related markets
- **Renewable Energy Coordinators:** Specialists in managing renewable energy sourcing and supplies.

4.1.3 Climate Literacy and New Mindset in Leadership

The consultation raised, but did not resolve, whether all business graduates need a foundation in climate science. Industry views ranged from seeing no need to those who consider the fundamentals of climate science essential for all graduates.

Even if a lot of climate-change knowledge is considered unnecessary, graduates with carbon and energy management expertise are still essential. Those graduates must understand the business case for energy efficiency or productivity as the basis for business innovation and improvement. This could be in products, services, operational business improvement, scaling renewable energy production or sourcing, and/or developing entrepreneurial and new production solutions. For example, the Australian Hotels Association says its members want safer, greener, cheaper, and more reliable power.

Regardless of their focus on climate, graduates with expertise in energy management play a vital role in promoting energy efficiency, renewable energy, and innovative business solutions. They should possess

analytical skills in energy management and knowledge of Power Purchase Agreements (PPAs), renewable energy systems, and new product solutions.

The Australian Hotels Association says graduates also need *'A touch of entrepreneurship and thinking outside the square to bring it all together.'*

Those advocating for a foundation in climate knowledge differ in how they identify graduate opportunities.

For some, their framing of the skill set required relates to transferable skills that enable graduates to take positive action in response to climate science.

Examples are:

- **Communication skills and capabilities** in integrating cross-functional and cross-disciplinary information
- **The ability to craft narratives** to inform the business case of an organisation's transition and impacts on financial statements
- **Systems thinking and dynamics analysis** that complement business analysis.
- **Critical thinking**
- **Negotiation skills**
- **The ability to form cross-sector collaborations, partnerships and alliances** across value chains and markets
- **Understanding the social impacts of processes**, their relationship with technical and regulatory developments and potential unintended consequences
- **Adaptive capacity for cross-sector mobility and large-scale change**
- **Entrepreneurial and intrapreneurial thinking** – especially for new clean energy and technology invention and implementation, fugitive emission solutions, advanced analytics, automation and AI, machine learning and information systems integration, and streamlining data collection and reporting
- **Project management** for climate clean energy transition planning
- **Managing organisational and behavioural change**.

Other peak bodies see a foundation in climate science and ecology as crucial to understanding climate-related standards and issues behind well-informed business decisions.

For example:

- **Accountants** need to understand the basics of carbon accounting and the requirements of the climate-related disclosure standard, AASB S2
- **Financial professionals** should know the return on capital from carbon intensity reductions, carbon markets and trading. These include basic concepts such as greenhouse gases and global warming potentials, as well as risk mitigation and adaptation strategies
- **Corporate affairs and governance professionals** must identify credible information on carbon risk and opportunities and interpret changing policies locally and globally to avoid greenwashing
- **Professionals in construction, mining, project management, agronomy, and analysis** require upskilling to comply with legislation and regulations, meet market demands, and effectively evaluate options, especially in uncertain technological environments.

Ensuring those core competencies equip graduates with a climate science foundation to understand the credible evidence base that informs net-zero transitions and ensures science-aligned climate information and strategy development.

Graduates should be able to implement science-based target; understand interpret, and assess the validity of climate-related and nature-based financial information; interpret carbon information; and know how to comply with nationally determined contributions, especially for Scope Three emissions.

They should be able to apply scenario analysis for assessing the different strategic implications for businesses operating in a 1.5-degree versus a two-degree (or warmer) world.

4.2 Overlapping Strategies: From Compliance to Transformation

Companies are responding to new legislation, greenhouse gas (GHG) reduction commitments and the establishment of the Net Zero Economy Authority by embedding climate considerations into core business functions. Some, especially in high-emitting sectors, focus on mitigation. Others involved directly in energy transitions or innovations in low GHG intensity are looking at longer-term transformational strategies.

> *Climate change is not a cliff face. It's a journey and it's a different journey for different sectors.*
>
> National Farmers Federation

The variation in responses received from the industry groups can be represented by differing capability sets across sustainability waves (See Table 4.2 below, adapted from Benn et al., 2018).

In the first wave, organisations reject or are non-responsive to the imperative for positive contributions to climate action.

In the second wave, organisations focus on improving their positive contributions to climate action to:

- Avoid risk and sanctions through improved compliance with legislative, regulatory, or other industry or stakeholder policies
- Add value through cost or eco-efficiencies and low GHG-intensive technology improvements
- Create and capture market value through strategically proactive responses to mitigating or adapting to climate change.

In the third wave, the driver is to regenerate social and ecological systems through new business models and climate-positive solutions. This is a simple model, considering that organisations may contribute to climate action through several approaches simultaneously or vary their focus at different times. However, the differentiation prepares graduates to respond positively to climate action through different means. They will consider how to generate excellent value or more positive contributions by moving away from the first wave towards third-wave approaches.

Table 4.2 Waves of capabilities to contribute positively to climate action

First Wave → Second Wave → Third Wave

Rejection and Non-responsive	Compliance and Risk	Efficiency	Strategic Proactivity	Transformation
Oppose or ignorant of climate change and action	Reduce risk of sanctions from legal regulatory and stakeholder obligations Adhere to mandated sustainability and climate-related financial reporting and disclosures Assure credible implementation plans across value chain	Develop and manage cleantech and low-carbon intensity energy solutions across value chain Invest in climate-related financial opportunities Develop entrepreneurial capabilities for net-zero innovation processes and products	Lead and manage net-zero transition strategies – across functions, value chains and sectors Advocate for supportive institutional arrangements Operate within planetary boundaries with science-based targets, scenario planning and foresight	Reinterpret the business model to be an integral self-renewing element of social-ecological systems Adaptation and whole of systems change for climate positive solutions Circular, regenerative and nature base business models

Adapted from Benn et al, 2018

The following are some examples extracted from the industry consultation responses that typify the different approaches and associated capabilities for contributing positively to climate action.

Compliance and Risk: This focuses on policy, regulation, and standards. Mandatory climate-related financial disclosures have driven a surge in demand for sustainability teams skilled in avoiding greenwashing, scenario analysis, and risk and opportunity assessment.

This is evident in the challenges and opportunities across banking, superannuation, insurance, and financial services focus of the Australian Sustainable Finance Institute (ASFI) and the Financial Services Council (FSC). ASFI notes that financial institutions have evolved quickly on climate issues, from assessing risk to creating financial system stability. The Climate Leaders Coalition (CLC) sees large corporations are already well-advanced in their sustainability governance and management and reporting capabilities. Therefore, the focus will be on upskilling relative to the dynamic global and local legislative and regulatory landscape.

Beyond basic reporting, there are opportunities for graduates skilled in interpreting scientific data, advising clients on climate transitions, preventing greenwashing, and ensuring credible governance. AiGroup notes that the big challenge will be in interpreting the information.

> *Which climate scenarios? What are the kinds of physical and financial, physical and transition risks and opportunities they face? But then to upskill management so they can incorporate that stuff into strategy where it's financially material.*
>
> AiGroup

Benn, S., Edwards, M. & Williams, T. (2018) Organizational Change for Corporate Sustainability (4th Ed), Routledge

In professional services, graduates can guide companies on credible transition pathways, navigate global legislative and regulatory regimes, and implement decarbonisation strategies across value chains.

Eco-Efficiency and Climate Innovation

Businesses see the potential to reduce costs by optimising energy and material productivity, implementing low GHG-intensity innovations, and financing new technologies like AI for smart energy systems.

The focus is on everyday innovations with the potential for large-scale impact across industries. For example, the Australian Hotels Association says:

> *It's business just getting on with the little things; changing the seals and their fridges, putting in LEDs, putting in motion sensors, joining renewable energy, PPAs.*

In mining and agriculture, cost drivers are incentives to invest in emissions-reduction skills and technologies tied to productivity gains. The Minerals Council of Australia focuses heavily on improving energy usage and considers a full range of options. The National Farmers Federation (NFF) describes action on climate as both market risk and opportunity.

> *Carbon and biodiversity are new commodities, and people need help to understand how to engage with them. While risk is a driver, farmers respond really well to market conditions and even known emissions reduction technologies would only be adopted if prices improved… We're adapting in terms of thinking.*
>
> National Farmers Federation

AIGroup highlights their members being 'scarred by the climate war era', when policy signals were misleading. The most effective capabilities are now in developing the business case for improved performance and productivity through energy efficiency and lowered costs. This applied particularly to electricity generation, distribution and supporting sectors where the new technologies are already broadly implemented.

> *The economy has shifted and so they are just going to keep going in a low- and zero-carbon direction because of underlying economics and market dynamics.*
>
> AiGroup

Implementing and financing new technologies, like AI and smart energy management systems, will become essential skills for professionals monitoring energy usage and emissions effectively.

Strategic Proactivity

> *It can't just be about reporting. It has to be far more transformative for the entire organisation.*
>
> Climate Leaders Coalition

With this approach, organisations take action on climate as an underpinning management principle. For example this can mean integrating sustainability into the core business strategy or creating new business models linked to innovation. Capabilities are needed to take a holistic approach and integrate sustainability into the core strategy while driving climate solutions across value chains. Climate and other planetary boundaries are respected as foundations for moving toward regenerative approaches.

Sustainability must be integrated into core business planning, aligning all functions with net-zero goals.

> *We can't expect finance people to have a climate science background, but we can expect climate science to be built into operational and organisational strategies. So this is how we do business, because we've got to align 1.5 degrees, and this is how we shape our decisions to get there. Then finance delivers on the strategy; procurement delivers on the strategy.*
>
> UNGCA

In addition, the Climate Leaders Coalition calls for strategy capabilities that don't just evaluate based on the way you've done it for the last 20 years. P and L, right? You've got to do it under three to five different scenarios, and you've got to, therefore, have derived carbon pricing implicit in these.'

This also needs to be combined with the capacity to think critically and to cultivate complex judgements while considering dynamic information in a highly volatile environment.

The NFF says: 'Farmers are much better at dealing with volatility than most of the rest of the world', given they constantly adapt cropping and livestock practices to the natural environment conditions.

AiGroup discusses the increased importance of developing estimates of the large-scale changes needed for emissions reduction and skilled communication skills in translating this into useful information to strategically influence business decision-making in operations and capital investment. Top management and leaders across value chains must drive organisational change. Climate and sustainability must be integrated into core business planning, aligning all functions with net-zero goals.

Transformational Leadership

There is a growing recognition of business interdependencies with climate and nature considerations as fundamental to all business decisions.

The Australian Sustainable Finance Institute (ASFI) has developed a capability framework. It emphasises actions grounded in systems-based understanding rather than tactical steps. This interdependence of business with climate and biodiversity outcomes requires skills in systems thinking, planetary boundaries and a broad understanding of sustainability beyond compliance. 'That's more than a conceptual understanding of systems,' the ASFI says.

The Climate Leaders Coalition explicitly put this as a new way of conceptualising business decisions with long-term time horizons:

> *Ideally, you need to be allocating capital into things which will sustain the business beyond 2050 – which is reducing emissions, but also possibly other business models, zero- or clean-economy business models.*
>
> Climate Leaders Coalition

The CLC sees a need to consider foresight and adaptation in transforming value chains through pragmatic consideration of capital investments that includes climate risk assessment. For example, 'where you put new sites, or new housing, new factories.'

ACCI describes it as an acute challenge for the tourism sector, which is experiencing physical impacts. People and businesses will need to be able to 'even just pivot.' Beyond net-zero implications, this capability involves adapting businesses to changed physical conditions.

4.3 Ambiguity and Scale

Sustainability teams are now expected to drive organisational change, not just implement basic programs. (UN Global Compact Network Australia)

Achieving a net-zero economy requires long-term strategic foresight and managing ambiguity.

Graduates who can use scenario planning, collaboration, and longer-term strategic thinking will be essential for large-scale transitions. These include people who can handle ambiguity; are skilled at confronting unfamiliar, complex challenges; can identify key information to make decisions amidst various scenarios; and can consider the impact of investments beyond 2050. They also need to excel in securing capital and driving the implementation of large-scale transitions. Investment decisions must consider long-term implications beyond 2050.

The Climate Leaders Coalition says capital should ideally be allocated to sustain the business beyond 2050. Reducing emissions is one way to do this, but other business models, such as zero- or clean-economy models, may also be considered.

4.4 Technological Innovations

While technology is not a silver bullet, it will drive and enable many climate solutions. Skills in integrating AI, data-driven sustainability and climate analysis into core business functions are essential.

Financial, analytical, and business development skills are critical for assessing investment opportunities, planning energy transitions, and reconfiguring value chains to protect against climate risks and disruptions.

As AI and automation streamline analytics, the demand for relational skills that support partnerships and collaborations between stakeholders may grow.

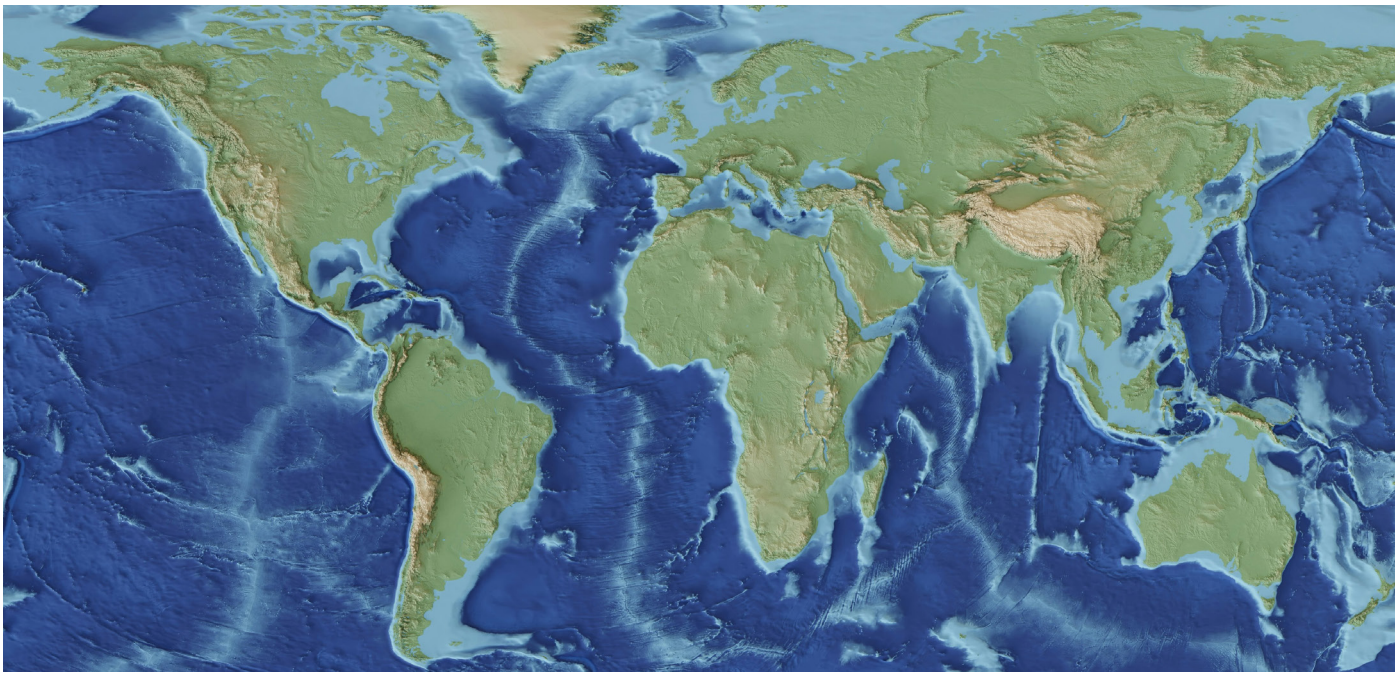
Business innovation will be needed to envision the next wave of technological solutions and new business models in regenerative and carbon drawdown solutions, including products and materials that capture embodied carbon.

Key areas of focus include:

- **Decarbonising high-pollution industries and creating large-scale solutions**

  On the big emitters, it's a huge existential threat
  – Climate Leaders Coalition
- **Adaptation strategies** tailored to specific sectors, like crop changes or methane mitigation
- **Optimising natural systems' absorptive capacity**: As companies integrate nature and regenerative strategies, employees with ecology and environmental backgrounds are increasingly valued
- **Innovative energy efficiency, productivity, and drawdown solutions**, including technical skills for early-stage climate ventures and blended finance
- **Greening technology and leveraging it for sustainability transformation**
- **Refocusing on human capabilities.**

  There's going to be more opportunity for creativity and the things that humans are good-at partnerships, joy, creativity, one-on-ones, building relationships, influencing, and negotiation.
  – UN Global Compact Network Australia



4.5 Leading Just Transitions

Integrating cross-cultural competencies is essential to address developmental issues in regional areas, particularly in the Pacific Islands and neighbouring regions with high youth populations.

> *We just don't have the skilled personnel to be able to make this transition...and there's a whole range of issues related to it, like social license and skills, particularly in regional areas.*
>
> Australian Chamber of Commerce and Industry

Business networking and sharing best practices with close competitors and suppliers can drive solutions across industries and value chains.

> *Our industry is very lucky. It's got a great Bush Telegraph; if something works, they'll all be on it. They're not afraid to change.*
>
> Australian Hotels Association

Finance skills are crucial for a just transition.

Critical thinking, culturally aware communication in international business negotiations, and familiarity with global climate policies are essential for building climate-resilient communities.

> *Familiarity with global policies and environmental law is really helpful, at least for trend spotting. We'll see increased complexity in that area…The more business students understand global implications and policy for environmental adaptation and mitigation, the better.*
>
> UN Global Compact Network Australia

The Climate Leaders Coalition says the context also includes 'geopolitics, new risks, energy security, sufficiency, and climate diplomacy.'

A Final Word

5.1 Advice to Business Schools

While the focus on required skills and capabilities differed, those interviewed agreed that specific needs would evolve.

This collective vision sees climate change as a foundational issue that affects all facets of business and society. It calls for a comprehensive and integrated approach to business education, preparing graduates to address climate change's complex, interdisciplinary challenges.

The following weaves together the common themes or general advice given by the various peak bodies.

Integrate across all disciplines

Climate change is shifting the mission of educational institutions.

Business schools are increasingly called upon to embed climate-related knowledge across all subjects, integrating it into the core curriculum rather than treating it as a standalone topic.

Climate change should be central to all business education. It is reshaping industries in a similar way to the communications revolution in the 1990s.

Future business graduates must possess generalist skills to recognise climate risks and opportunities. They must also emphasise adaptability and scenario planning to anticipate large-scale changes.

Interdisciplinary programmes are essential for students to effectively tackle complex climate issues and keep pace with rapid regulatory changes that impact businesses.

Sustainability needs to be a holistic part of business education, integrated into every aspect of learning rather than isolated in specialised courses. It should be relevant to all disciplines and impact business operations and governance across various sectors.

Despite this, sustainability education across universities remains inconsistent. There is a need for integration into all business and accounting courses to standardise knowledge levels.

Boost focus on generalist and specific areas

While the focus of sectors differ, there are direct calls for skills and capabilities relevant to each discipline.

Specific advice includes the need for:

- More **economics-focused** graduates who can address the policy changes affecting businesses due to climate challenges
- **Creativity and innovation** for integrating sustainability into business models. This requires out-of-the-box thinking to achieve decarbonisation and nature-based solutions
- **Accountants with expertise in carbon accounting** to contribute effectively to emission reduction initiatives within organisations
- Business schools to educate students on **agriculture's role in climate adaptation**, fostering an

understanding of sustainability within the agricultural context. Upskilling in agriculture is necessary to help farmers navigate climate-related challenges.

Along with general advice, there are calls for:

- **Adaptation and resilience** in the face of climate risk to be part of business education, with schools teaching students mitigation and adaptation strategies
- **Generalist graduates who are knowledgeable in ESG frameworks**, sustainable finance, and cultural competency. This would allow them to work effectively across borders and adapt business practices for a globalised world
- **Business graduates equipped to have credible discussions on climate transition plans**, especially in roles requiring engagement with large-scale clients
- **Business schools to prepare students for large-scale transitions** and the technological shifts required for climate goals as automation and Industry 4.0 redefine roles across industries
- **Planning for future climate scenarios** and developing climate literacy essential for long-term sustainable business strategies
- **Pragmatic efficiency, entrepreneurial thinking, and operational optimisation** as crucial skills for business graduates. Sustainable solutions should be business-led rather than solely relying on government actions. This emphasising the private sector's role in achieving environmental goals
- **Business students with critical skills like complex problem-solving, critical thinking and stakeholder negotiation** to adapt to climate challenges effectively. Business schools should instill a sense of efficacy in students, empowering them to make impactful changes
- **Meeting the growing demand for sustainability programmes**. This will require academia to collaborate closely with industry to address real-world climate reporting, compliance, and risk management needs.

Use lifelong learning, upskilling and short courses

Flexible, lifelong learning is necessary for graduates to adapt to new technologies. Industry partnerships with educational institutions can help bridge skill gaps.

Business graduates must develop the skills for continuous learning to stay current with evolving sustainability standards.

Specific methods

Educators should adopt experiential and game-based learning methods to prepare students for real-world sustainability challenges and encourage cross-disciplinary learning to enhance collaboration skills. They should incorporate engaged scholarship pedagogies that connect academic theories with professional practice to expose student to dynamic and complex markets, environments and contexts. Exposure to business leaders that are managing the complexities of climate change will support students in understanding best practice and emerging challenges.

Place-based education is vital. Business graduates must be prepared for industries beyond urban settings, where different skill sets are necessary. This is particularly important for attracting Indigenous talent to industries like mining.

To address the current skills shortage, universities should offer targeted short courses focusing on climate risk management and governance.

Dynamic evolution

Business graduates need to understand the dynamics of ecosystems and how environmental systems intersect with business operations.

Universities must prepare students for rapid industry changes, offering robust programmes, which foster adaptability and understanding of complex systems.

5.2 What they are doing for their memberships

Below is a summary of how the peak bodies prepare their members to transition to a net-zero economy through initiatives and programs.

UN Global Compact Network Australia (UNGCNA)

- Climate Ambition Accelerator program – guides organisations through setting science-based targets
- Advanced Climate Reporters Community of Practice – for sharing best practices
- Sustainability training courses, including a Greenwashing for Marketers course
- Member collaboration and initiative showcasing
- Advocacy and consultation on behalf of members.

Climate Action Network Australia (CANA)

- Advocacy for government incentives and policies supporting net-zero transition
- Successfully advocated for *Future Made in Australia* investment
- Raised awareness of more focus needed on fostering entrepreneurial risk-taking in the business and education sectors.

Climate Leaders Coalition (CLC)

- Cross-value chain collaboration
- Support for sustainability reporting and regulation navigation
- Circular economy guidance
- Collaboration between businesses, government, and civil society.

National Farmers' Federation (NFF)

- Carbon calculator development with research institutions for emissions management and reporting
- Australian Agricultural Sustainability Framework leadership – a system for reporting and communicating the sustainability of the agricultural sector
- Engaging with government and businesses for farmer access to information, skills, and financial support
- Support for climate adaptation and carbon offset market opportunities.

Australian Hotels Association (AHA)

- Renewable Energy Power Purchase Agreements that:
  - Reduce energy costs by approximately 40%
  - Cut carbon emissions by nearly 200,000 tons of CO_2 equivalent annually
- Knowledge sharing and best practice exchange – including recognition of sustainability efforts through awards and showcasing successful initiatives
- Collaborating with other sectors, such as cinemas and pharmacies, to share insights and strategies to broaden the impact of sustainable practices across industries
- Education and guidance on renewable energy transition and implementing sustainability measures.

AiGroup

- Enabling education, industry, and policy collaboration
- Upskilling and reskilling initiatives with a current initiative focussed on skills needed in the future
- Research and surveys on workforce requirements
- Encouraging climate literacy and investment support
- Working with educational systems on curriculum alignment for a net-zero economy.

Australian Chamber of Commerce and Industry (ACCI)

- Sustainability Advisory Group response to government climate policies
- Advocacy for practical regulations considering SME needs
- Skills development emphasis to ensure there are enough skilled workers to meet government targets for renewables. VET sector training development for clean-energy jobs
- Addressing barriers – concerns about social licensing, skills shortages in regional areas, and the need to upskill existing workers are being raised with the government, particularly concerning policies like Net Zero by 2030.

Certified Practicing Accountants Australia (CPA)

- Micro-credentials, webinars, and learning opportunities in carbon accounting and sustainability reporting
- Advocacy for the integration of sustainability into academic programmes
- Collaboration with other professions, such as legal and scientific communities, to provide professional education and guidance.

Australian Sustainable Finance Institute (ASFI)

- Leadership working group for sharing sustainable finance experiences
- Has developed a capability framework outlining key sustainable finance skills
- Supports for understanding intersections between climate, nature, and social issues
- Sustainable finance skills development.

Chartered Accountants Australia and New Zealand (CA ANZ)

- The inclusion of sustainability-related competencies, including climate reporting, into the core CA program and the Sustainability for Accountants elective in the foundational CA Program
- Micro-courses on sustainability, including climate reporting
- Integration of sustainability into the CA Capability model
- Webinars, guides and playbooks to support members to implement mandatory requirements and understand areas of focus.
- Mandatory climate-disclosures and assurance included in annual conferences
- Policy advocacy for sustainability reporting standards and sustainable business practices.

Minerals Council of Australia (MCA)

- Climate Action Plan launched in 2020 for production decarbonisation, This ncludes efforts to decarbonise production and increase renewable energy usage
- Annual emissions progress reporting using public data
- Workforce development workshops for a net-zero future, including holding workshops to identify necessary skills and technologies
- Industry advocacy for mining's role in net-zero transition.

Insurance Council of Australia (ICA)

- Climate Change Roadmap (2022) with targets:
  - Net zero by 2030 for operations
  - Net zero by 2050 for investments, supply chain, and underwriting
- Collaboration with the Australian Prudential Regulation Authority (APRA) on climate vulnerability of general insurance availability
- The ICA and its members have released a climate change roadmap and conducted economic and actuarial analyses on the costs of extreme weather. They are focusing on improving building codes and investing in resilience.

Deloitte

- Structured learning programs in partnership with RMIT Online for sustainability standards
- Upskilling auditors in decarbonisation and climate-related standards
- Required learning requirements for regulatory compliance
- Integration of climate and ESG considerations into core business functions.

Edge Impact

- Climate risk consulting, climate readiness and decarbonisation strategy development
- Regulatory change navigation guidance
- Thought leadership and white papers. However, the term net zero is being used less frequently due to concerns about greenwashing. The focus has shifted more towards decarbonisation as a broader strategy.

Appendix one

Questions for the Industry Consultation

1. How will climate change impact the industries and professions your association represents?
   a. How certain are you that these changes will happen?
   b. How soon do you think they will take effect?

2. What specific skills and capabilities will be in high demand as organisations adapt to climate change challenges and/or improve their business performance in a net-zero environment?
   a. Are these skills currently in short supply?
   b. What types of jobs or roles will be most affected?
   c. Do you foresee new jobs being created or an increase in the importance of existing roles? If so, can you provide specific examples?
   d. When is there likely to be an increase in demand for a climate change skilled workforce?

3. How will technology and innovation change the skill profile of your industry's workforce?
   a. Are new capabilities required?
   b. Are there skills that will be redundant?

4. What does the head of the curve look like? What are the most promising or emerging fields and/or occupation changes to improve business in a net-zero economy?

5. How is your [professional association] helping to develop strategies, bridge the skills gap and prepare your members for the future of work in a net-zero economy?