Developing a Climate Capability Maturity Model for Australia's Financial System

Gordon Noble, Research Director, UTS Institute for Sustainable Futures,
gordon.noble@uts.edu.au

Alison Atherton, Research Director, UTS Institute for Sustainable Futures,
alison.atherton@uts.edu.au

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Abstract

Transition to net zero emissions requires financial system participants to build climate skills and competency. Without adequate and credible capability, the progress of transition to net zero emissions may be impeded. Whilst there is evidence of initiatives to build the climate skills and competency of individuals, there is a need to focus on the capability of institutions. Capability Maturity Models that were originally developed to assess the capability of software companies provide a model to assess the climate capability of financial institutions. A Climate Capability Maturity Model for Australia's financial system is proposed. A use case is to integrate climate capability into prudential standards via the establishment of a Climate Capability Assessment Score.

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Introduction

Climate science informs us that capping global temperatures at 1.5°C with limited or no overshoot minimizes the risks of severe climate impacts, including the crossing of catastrophic climate system tipping points.[i] The scale of finance required to transition to a low carbon economy, both in Australia and globally, goes well beyond what the public purse is able to fund. Private sector finance is essential to achieving domestic and global climate goals. Increasingly there is an understanding that transitioning to net zero emissions, whilst building climate resilience, requires a global workforce with climate-related skills and capabilities across a wide range of organizational functions and across all sectors of the economy. This paper focuses on climate skills across the financial system.

LinkedIn's Global Green Skills Report 2024[ii] reveals that demand for jobs with green skills is increasing. In 2024, 7.7% of all job postings on LinkedIn required green skills, an increase from 7.3% in 2023.[iii] According to LinkedIn, between 2023 and 2024 global demand for 'green talent' grew twice as quickly as supply, with demand increasing by 11.6% and supply by 5.6%. Concerningly whilst LinkedIn's 2023 Global Green Skills Report found that across all jobs one in eight workers had green skills, in the finance industry only one in fifteen workers had green skills.[iv]

Our own research suggests that there is a significant climate skills gap in Australia's finance industry. In October 2022, in collaboration with CSIRO, we released a report on the results of a survey of sustainable finance professionals across Australia's financial system.[v] A key finding from the research was that demand for climate skills was greater than supply, with 67% of survey respondents indicating there is less supply than demand and nearly 40% of respondents saying there is much less supply than demand. Despite the importance of climate skills to survey respondents' roles 63% felt that they needed to upskill on climate skills. More than 70% of respondents identified that there were barriers to upskilling.

This paper notes the range of initiatives focused on building the climate skills of individuals. There is however relatively little focus on mechanisms that support financial institutions to build the necessary institutional climate capabilities. Ultimately, it is financial institutions that are responsible for delivering their own net zero and climate resilience targets. An unstructured approach to climate skills development and deployment could impact on the capacity of financial institutions to deliver net zero emission and climate resilience targets and their management of climate risks.

The paper explores the use of capability maturity models and proposes the development of a Climate Capability Maturity Model (CCMM) for Australia's financial system. A use case for a CCMM by Australia's prudential regulators is proposed. We offer illustrative elements of a CCMM and propose a process and method to consult with stakeholders to develop a model for implementation.

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Recognition of importance of climate skills

There is growing recognition across Australia's financial system of the importance of an appropriately skilled workforce, to deliver an economy-wide transition to net zero emissions and climate resilience. This includes the skills to manage processes, such as integrating climate change considerations into financial decision-making, climate risk identification and management, scenario analysis and so on. Responding to the Federal Government's Sustainable Finance Strategy consultation, industry groups including Australian Banking Association, Australian Council of Superannuation Investors, Association of Superannuation Funds of Australia, Australian Sustainable Finance Institute, Principles for Responsible Investment and the Responsible Investment Association Australasia identified the importance of climate skills: [vi] Globally, a number of jurisdictions have developed initiatives focused on developing climate skills:

- The Australian Sustainable Finance Institute has developed a pilot version of a Sustainable Finance Capability Framework that is based on seven capabilities for sustainable finance professionals.[vii] Supported by a Sustainable Finance Capability Reference Group made up of 13 professionals from across finance and academia, the pilot framework identified three proficiency levels (Junior, Intermediate and Senior) for the following seven capabilities: sustainable finance strategy, sustainability risk management, transition planning, sustainable financial products, sustainability reporting, First Nations and finance, and sustainable mindset
- The Hong Kong Monetary Authority (HKMA) has supported the establishment of the Centre for Green and Sustainable Finance (GSF Centre)[viii] to "build capacity and enhance talent and data resources for the financial industry". HKMA has released Core Level of the Enhanced Competency Framework on Green and Sustainable Finance (GSF) which is non-statutory framework that sets out common core competencies and capabilities required of practitioners who are performing functions related to GSF in the banking industry in Hong Kong. [ix]
- Skillnet Ireland and the European Union have co-funded the Skillnet Climate Ready Academy that offers specialised training for businesses in the areas of Climate Action, Sustainability, and Corporate Social Responsibility. .[x]
- Japan's Financial Services Agency Expert Panel on Sustainable Finance focuses on skills and competency. In 2022 a Skills Map was produced which supports universities to develop curriculum. Industry associations including the Japanese Bankers Association, the Life Insurance Association of Japan, the General Insurance Association of Japan and Japan Securities Dealers Association are promoting several initiatives including training for practitioners.[xi]
- The Monetary Authority of Singapore and the Institute of Banking and Finance Singapore (IBF) have launched the Sustainable Finance Technical Skills and Competencies (TSCs) framework to provide robust, common level of sustainable finance proficiency, knowledge and abilities needed for individuals to perform various roles in sustainable finance.[xii] The Monetary Authority of Singapore (MAS) has committed S$35million to upskill and reskill specialists in sustainable finance and has joined forces with the Institute of Banking and Finance (IBF), supported by Workforce Singapore (WSG), to launch a new Sustainable Finance Jobs Transformation Map (JTM).[xiii]
- The United Kingdom's Green Finance Institute (GFI) hosts the Sustainable Finance Education Charter which is designed to build the capacity and capability of the green finance sector by ensuring all financial services practitioners have the skills necessary to accurately assess climate and nature-related risk and opportunities.[xiv] The Charter, a partnership between the GFI, Department for Energy Security and Net Zero, and 14 leading, global professional

bodies, is the UK's main policy mechanism to improve sustainability-related skills and expertise to support green and sustainable finance policy delivery.

- The Global Capacity Building Coalition[xv] brings together UN and multilateral agencies including the World Bank, Asian Development Bank (ADB), Asian Infrastructure Investment Bank (AIIB), European Bank for Reconstruction and Development (EBRD), Glasgow Financial Alliance for Net Zero, International Monetary Fund, International Sustainability Standards Board (ISSB), Network for Greening the Financial System (NGFS) and the Principles for Responsible Investment (PRI). Funded by Bloomberg Philanthropies, the focus of the Coalition will include establishing an online platform for training and learning.

The focus of these initiatives is principally on the development of skills for individual financial system employees. There is a lack of initiatives that focus on the climate capabilities of financial institutions. A key question is how stakeholders, including public policy makers and regulators, can assess whether individual financial institutions, and the financial system as a whole, have the capabilities needed to manage climate risks and the transition to net zero. In addition to the presence of skilled employees, there is a need for financial institutions to develop systems and processes that support the identification and management of climate capability at the organizational level.

Assessing climate capability of financial institutions

In this paper we explore a potential mechanism to build systems and processes for finance institutions to assess their climate capabilities – capability maturity models. Capability maturity models were originally developed to assess the capabilities of software developers at a time when that sector was rapidly evolving. In 1986, responding to US military projects involving software subcontractors that ran over-budget, the US Department of Defense funded the Software Engineering Institute (SEI) to develop a mechanism to assess the maturity of software contractors.[xvi] An immature organization was identified as being one where there was no objective basis for judging product quality, whilst a mature software organization possessed an organization-wide ability for managing software development and maintenance processes. The resulting Capability Maturity Model for Software identified a structured collection of best practices determined by research evidence, expert opinion and evaluations based on five maturity levels (initial, repeatable basic, defined, managed detail and optimizing continuous):[xvii] [xviii]

Capability Maturity Models have since been proposed for a range of other purposes, including sustainability functions. An example of a proposed model is[xix] a Sustainability Maturity Model[xx] that aims to support corporations assess the maturity of efforts to deliver sustainability outcomes.

A particular area of relevance for financial institutions is the use of capability maturity models to address risks of cyber hacking. Responding to rising cyber-attacks, the US Department of Energy developed the Cybersecurity Capability Maturity Model in 2012. The C2M2, which was developed in collaboration with asset owners of critical infrastructure, enables organizations to evaluate cybersecurity capabilities consistently, communicate capability levels in meaningful terms, and prioritize cybersecurity investments. The C2M2 includes 356 cybersecurity practices, which are grouped into 10 domains. Practices represent the activities an organization can perform to establish and mature capability in the domain.[xxi] Relevant to climate risks, the C2M2 domains include practices that reflect the dynamic nature of cyber-attacks including establishing and maintaining activities and technologies that support situational awareness.

There are several benefits of capability maturity models. At the organizational level they can provide an ability to benchmark and evaluate the current level of capability of practices, processes, and methods, supporting decisions on where to prioritize investments. At a systems level they can provide

a foundation for consistent and systematic evaluation.[xxii] We now turn to explore potential development and application of a Climate Capability Maturity Model (CCMM) for Australia's financial system.

Developing a Climate Capability Maturity Model

Developing a Climate Capability Maturity Model for Australia's financial system requires an understanding of the different uses of climate skills across an organization. Climate skills will vary according to the organization's function. Insurance companies for instance will have different needs for climate-related skills than banks and investors. A Delphi Method procedure, a questionnaire technique that uses multiple iterations to develop a consensus of opinion, could provide an efficient mechanism to develop a CCMM for Australia's financial system. A structured group of financial system experts would provide feedback and questions on the CCMM to develop a final version based on their expertise.

A Climate Capability Maturity Model (CCMM) for Australia's financial system needs to serve a clearly defined purpose. In the case of the US Department of Energy's C2M2, its purpose is to "help organizations of all sectors, types, and sizes to evaluate and make improvements to their cybersecurity programs and strengthen their operational resilience cybersecurity programs and strengthen their operational resilience." [xxiii] Whilst a CCMM could support a number of different uses, a key use case for a CCMM could be integration into prudential supervision practices of the Australian Prudential Regulation Authority (APRA). APRA could utilize a CCMM to develop a Climate Capability Assessment Score that could facilitate incorporation of climate risk into Prudential Standards on risk management.

Globally, prudential regulators have been focusing on integration of climate risks into prudential supervision practices. According to the OECD, climate-related prudential policies relating to risk management and supervision, market discipline, and the level and quality of capital, had been adopted in 41 countries by 2023.[xxiv] The Basel Committee on Banking Supervision (BCBS), has issued principles to help improve both banks' management and supervisors' practices on climate-related financial risks.[xxv] The Principles state, "Supervisors should take regular stock of existing skills and projected requirements, taking into account relevant evolving market practices and supervisory practices in this landscape, and take timely measures to build adequate expertise in identified skill sets."[xxvi]

A key focus of Australia's prudential regulator, the Australian Prudential Regulation Authority is capability, Whilst generally not limited to climate-related risks, various prudential standards and practice guides reference the need for APRA-regulated institutions to have appropriate resourcing, skills and capabilities, including CPG 229, CPS 510, CPS 220. APRA has recently released a governance review that proposes requirements for regulated entities to identify and document the skills and capabilities necessary for the board overall and for each individual director, evaluate existing skills and capabilities of boards and individual directors and take active steps to address gaps through professional development, succession planning and appointments.[xxvii] Therefore, capability is considered as part of APRA's supervisory approach. APRA has integrated climate risk into its prudential supervision practices, issuing Prudential Practice Guide CPG 229 (Climate Change Financial Risks) that outlines that a financial institution's management is responsible for ensuring that adequate resources, skills and expertise are allocated to the management of climate risks, including thorough training and capacity building amongst relevant staff.[xxviii] CPG 229 aims to assist an APRA-regulated institution in complying with Prudential Standards including CPS 220 Risk Management (CPS 220). APRA has indicated[xxix] [xxx].

A key consideration for incorporation of climate risk into CPS 220 is how APRA can assess the climate capability of a financial institution. APRA uses a scoring system as part of its prudential supervisory practice. APRA's Supervision Risk and Intensity (SRI) Model[xxxi] combines tiering with risk assessment. Entities are grouped into four tiers based on their importance to the Australian economy. An entity's tiering determines the level of routine supervisory attention that is required to ensure adequate identification of risks and follow up of actions. With a given tier, different entities will operate with different levels of risk. APRA conducts an assessment and rating of key risk categories providing a consistent approach for assessing an entity's overall risk profile. APRA uses a simple six-point scale from A to F to rate entities. Entities with an A rating have minimal risk whilst entities with a rating of F are assessed as having critical risks. The ratings within the SRI Model enable APRA to rank supervised entities based on their level of risk. This ranking then enables APRA to assign a level of supervisory intensity based on the associated risk.

A CCMM could be incorporated into APRA' SRI Model through the establishment of a Climate Capability Assessment Score that could assess how an organization is managing the organizational capability requirements of climate risk as a component of integrating climate into Prudential Standard CPS 220 Risk Management.

Through a Delphi Method process a CCMM could develop domains and practices that support various use cases. From the perspective of climate skills three illustrative domains are identified for consideration:

- Strategy
- Skills Mapping and Analysis
- Continuing Professional Development

Domain 1: Strategy

A financial institution should have a strategy to build and retain climate skills across the organization including board, senior management and employees, that aligns with the organisation's climate objectives, including achievement of climate targets. The strategy should include remuneration aligned with skills levels and achievement of climate objectives.

Domain 2: Skills Mapping and Analysis

A financial institution should regularly map its existing climate skills and analyze future needs to align with the organisation's climate objectives, including climate targets. To support addressing system wide climate skills gaps, a financial institution should disclose to financial system regulators areas where skills gaps are pronounced. In an extended use case, this in turn could support policy-makers to identify system skills needs and gaps, and training and education providers to develop appropriate learning offerings to support system-wide skills uplift.

Domain 3: Continuing Professional Development

A financial institution should support employees to build and refresh climate skills through Continuing Professional Development programs. Climate CPD should be relevant to the employee's current role and any anticipated changes to that role. To qualify as CPD, activities should have written learning objectives based on learning needs and a documented learning outcome, be measurable and capable of being independently verified.[xxxii xxxiii]

Based on these three domains six illustrative questions are proposed that could form the basis of a Climate Capability Assessment Score:

Domain 1: Strategy

1. *Does the organization have a strategy to develop, maintain and retain the climate skills and competencies of its employees?*
2. *Does the organization's strategy identify (CPG 229) specific climate capability needs for directors, senior management and employees?*

Domain 2: Skills Mapping and Analysis

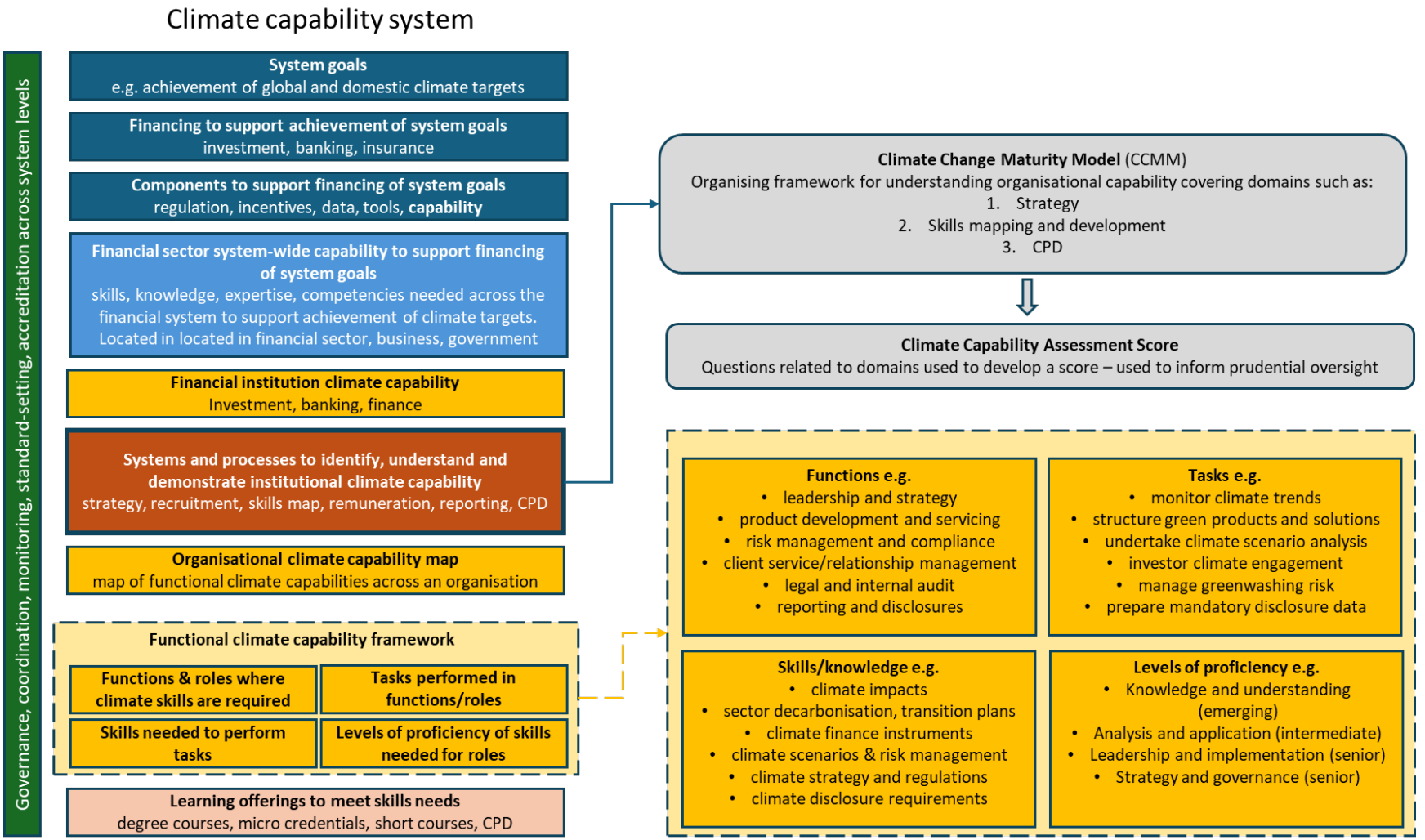
3. *Does the organization have adequate systems and processes in place to map its existing climate skills?*
4. *Does the organization have adequate systems and processes in place to understand where it may have skill gaps?*

Domain 3: Continuing Professional Development

5. *Does the organization have systems and processes in place to support individuals to acquire new climate skills?*
6. *Does the organization have systems and processes in place to capture and track the climate related learning of employees?*

Figure 1 below illustrates and summarises the components of the climate capability system and the role of a Climate Change Maturity Model and a Climate Capability Assessment Score within the overall system.

Figure 1 The role of a CCMM in the Climate Capability System



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Conclusions

This paper has made the case for the development of a Climate Capability Maturity Model as an essential component of managing climate related financial risk across Australia's financial system. To develop a CCMM for Australia's financial system there is a need to establish a collaborative process between financial institutions, financial regulators and universities. A Delphi Method process, through which a group of finance professionals iterate on a model to ensure that it reflects the needs of financial institutions and has practical uses, could help to facilitate this.

It is likely that the components of a CCMM, including climate capability practices and domains, will vary according to the functions of financial institutions. Developing a set of domains would provide a harmonized framework that would have the flexibility to capture the different practices across Australia's financial system. One of the key benefits of establishing a CCMM for Australia's financial system could be to establish a foundation for consistent and systematic evaluation of climate capabilities which can play an important role in supporting the transition to net zero emissions and climate resilience, by building financial system climate skills and competency.

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[xxix] https://www.apra.gov.au/apra-corporate-plan-2024-25

[xxx] https://www.apra.gov.au/risk-management

[xxxi] https://www.apra.gov.au/supervision-risk-and-intensity-sri-model

[xxxii] Refer to UK Financial Conduct Authority, FCA Handbook Continuing Professional Development, TC 2.1.22 G 31/12/2012

[xxxiii] Refer to Financial Conduct Authority, FCA Handbook, Maintaining competence TC 2.1.12 R 21/03/2016