

# Consultation on climate-related financial disclosure

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Submission by Energetics Pty Ltd

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# Executive summary

Energetics welcomes the opportunity to comment on a future climate-related financial disclosure regime for Australia. Although our work addresses both transition and physical climate risks, in this submission we focus on the latter. We see that efforts to analyse and manage physical climate risk are well behind efforts to address transition risk, and we believe that a mandatory climate-related financial disclosure regime is an important opportunity to raise both capabilities and expectations of physical climate risk management.

This submission focuses on the following points:

1. A mandatory climate-related financial disclosure regime will be most effective if it is designed to address Australia's climate risk management objectives. International alignment with the ISSB baseline should be considered as the starting point for the development of a robust domestic regime.
2. The disclosure regime should be established in phases that facilitate ongoing progress in the following areas:
  - a. Expansion of entities covered by the regime to eventually represent vectors of physical climate risk as well as material emissions sources across the economy
  - b. Improvement in the depth and breadth of disclosure
  - c. Development over time of necessary data, analytical and assurance capabilities across all economic sectors
  - d. Development of a suitable range of standardised analytical approaches so that comparisons between entities can focus on outputs rather than methodological differences.
3. A strong public capability to assess and prepare for climate risk is necessary to enable disclosing entities and other major stakeholders (e.g. governments, global capital markets and civil society) adequately assess and respond to climate risk. Essential elements of this capability are:
  - a. National climate science capability, including the development and provision of data and approaches to analyse decarbonisation and physical climate risk – and the interactions between these two stressors – at multiple levels (individual organisation, system, sector, economy, region)
  - b. High quality guidance – robust frameworks and tools for climate risk assessment, scenario analysis, and interpretation of results
  - c. Accounting and assurance approaches that can appropriately address the new complexities of climate-related risk information
  - d. Education and skills development across all of these areas so that company management and governance functions, as well as service providers, can understand and use the scientific data, guidance and assurance resources currently available and under development.

To discuss any elements of this submission, please contact me on [olivia.kember@energetics.com.au](mailto:olivia.kember@energetics.com.au).

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# Challenges and needs in physical climate risk analysis

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## Weaknesses in current practice

Energetics welcomes the opportunity to comment on a future climate-related financial disclosure regime for Australia. We work at the forefront of developing climate risk capabilities in Australia providing best-in-class science, tools and analytical approaches for organisations in both the public and private sectors.

Although our work addresses both transition and physical climate risks, in this submission we focus on the latter. We see that efforts to analyse and manage physical climate risk are well behind efforts to address transition risk, and we believe that a mandatory climate-related financial disclosure regime is an important opportunity to raise both capabilities and expectations of physical climate risk analysis and management.

Appropriate understanding of climate risks – to individual entities, and to sectors, systems and regions – is the first step towards climate risk management, and a mandatory disclosure regime that truly enhances understanding of climate risks at all of these levels will contribute to Australia's effective management of its climate risks, which are many, complex and severe.

However, a mandatory regime focused only on alignment with international standards will not necessarily address the following sub-optimal aspects of current practice:

- Poor understanding among climate disclosure preparers and users of how to conceptualise, assess and quantify physical climate risks, particularly as they relate to Australia. The non-stationarity of future climates, the differences in predictability of different climatic variables, the complexity of their interactions with each other and with social and natural ecosystems mean that traditional probability-based risk methods and approaches of the past are unable to produce meaningful assessments of potential futures<sup>1</sup>.
- Insufficient attention among some providers of consultancy and assurance services to the capabilities and limitations of physical climate risk data. For example, we have seen the provision of physical risk scores for Australian companies that do not take account of Australia's specific physical risk profile (for example, excluding bushfires), event probability distributions (where normal distributions can be wrongly assumed), and the need to assign different levels of confidence to each climatic hazard, as is standard practice in the IPCC process<sup>2</sup>.
- Lack of established approaches to investigate physical climate risks across all sectors. Methodologies and tools have been developed for specific projects (for example, analysis of risks to agricultural productivity undertaken for the CBA<sup>3</sup>), but these are very

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<sup>1</sup> *Energetics | Experts warn: current approaches to assessing physical climate impacts are flawed*

<sup>2</sup> *IPCC AR5 | Uncertainties Guidance Note*

<sup>3</sup> *CBA | TCFD 2019*

resource-intensive exercises, and cannot be scaled. Valuable guidance<sup>4</sup> has also been developed by the Climate Measurement Standards Initiative<sup>5</sup>, but this work needs to be expanded and updated on an ongoing basis.

- Lack of appetite or imperative to properly investigate physical climate risk, in part because there is little external pressure to do so. We see among investors<sup>6</sup> and financial regulators<sup>7</sup> globally a prioritization of transition risk over physical risk. While this may reflect a reasonable judgement that transition risk is a good place to begin practices of climate-related financial risk disclosure, it may also entrench low expectations and poor practice with regard to physical risk.
- Following from the points above, disclosures that present confident claims of resilience to climate risk may be based on inadequate assessment and may in fact be “greenwash”<sup>8</sup>. In a report by the FSB and NGFS on climate-related scenario analyses conducted by financial supervisors – among the most sophisticated efforts at climate-related scenario analysis globally – “many respondents highlight that measures of exposure and vulnerability are likely understated. One of the reasons is that, in many cases, metrics are not capturing second-round effects, potential climate non-linearities, and the costs and potential further externalities from risk management measures taken by financial and non-financial firms...The scarcity of available data and modelling limitations and uncertainties are other key reasons mentioned by authorities to suggest that these preliminary results might significantly understate actual climate-related risks and impact”<sup>9</sup>.
- Missed opportunities to capitalise on Australia’s national capabilities in both climate change science and meteorology, which are considerable. It is worth noting that Australia is the only country in the Southern Hemisphere (and one of only three countries east of India) with the capabilities to run global earth system coupled models<sup>10</sup>.

All these weaknesses make it more difficult for Australia to successfully adapt to climate change by impairing the market’s ability to allocate capital based upon risks and opportunities. This can only ever lead to suboptimal economic outcomes and increase the risk of economic maladaptation (likely to already be occurring in the residential property sector<sup>11</sup>). Maladaptation will impose high costs across the economy. Australia has unique exposures to physical climate risk, and is already facing higher costs for and more restricted access to reinsurance<sup>12</sup>. The physical risks of climate change present a significant and growing threat not just to the Australian economy but to national security as well.

For these reasons Australia needs to both establish a disclosure regime that raises expectations and standards of physical climate risk analysis, and support the regime with the development of a strong public capability to assess and prepare for climate risk.

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<sup>4</sup> *CMSI | Scenario Analysis of Climate-Related Physical Risk for Buildings and Infrastructure: Financial Disclosure Guidelines*

<sup>5</sup> *Climate Measurement Standards Initiative (CMSI)*

<sup>6</sup> *GARP | Global Survey of Climate Risk Management at Financial Firms*

<sup>7</sup> *FSB | Climate Scenario Analysis by Jurisdictions: Initial findings and lessons*

<sup>8</sup> While ASIC has to date considered greenwashing to relate to misleading claims of products or practices being “environmentally friendly, sustainable or ethical” this definition could include or be extended to encapsulate claims of climate resilience.

<sup>9</sup> *FSB | Climate Scenario Analysis by Jurisdictions: Initial findings and lessons*

<sup>10</sup> *ESGF-NCI*

<sup>11</sup> *Insurance Council | Building a more resilient Australia: Policy proposals for the next Australian Government*

<sup>12</sup> *AFR | IAG reinsurance: excess and costs rising of disaster protection*

# Capabilities needed for effective physical climate risk analysis and financial disclosure

A mandatory climate-related financial disclosure regime will be most effective if it is designed to address Australia's climate risk management objectives. International alignment with the ISSB baseline should be considered as the starting point for the development of a robust domestic regime.

The disclosure regime should be established in phases that facilitate ongoing progress in the following areas:

- a. Expansion of entities covered by the regime to eventually represent vectors of physical climate risk as well as material emissions sources across the economy
- b. Improvement in the depth and breadth of disclosure
- c. Development over time of necessary data, analytical and assurance capabilities across all economic sectors
- d. Development of a suitable range of standardised analytical approaches so that comparisons between entities can focus on outputs rather than methodological differences.

A strong public capability to assess and prepare for climate risk is necessary to enable disclosing entities and other major stakeholders (e.g. governments, global capital markets and civil society) adequately assess and respond to climate risk. Essential elements of this capability are:

- a. National climate science capability, including the development and provision of data and approaches to analyse decarbonisation and physical climate risk – and the interactions between these two stressors – at multiple levels (individual organisation, system, sector, economy, region)
- b. High quality guidance – robust frameworks and tools for climate risk assessment, scenario analysis, and interpretation of results
- c. Accounting and assurance approaches that can appropriately address the new complexities of climate-related risk information
- d. Education and skills development across all of these areas so that company management and governance functions, as well as service providers, can understand and use the scientific data, guidance and assurance resources currently available and under development.

Table 1 below outlines key constraints on the analysis of acute and chronic physical climate risks. Blue cells represent risks that can be modelled quantitatively; orange cells represent risks for which only qualitative analysis is possible; grey cells represent risks that can only be explored through scenario analysis underpinned by climate change projections. This table is drawn from *Treating climate uncertainties as knowable risks – a recipe for greenwash?*, a paper by Energetics, Swiss Re and ARC Centre of Excellence for Climate Extremes<sup>13</sup>.

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<sup>13</sup> [\*Energetics | Treating climate uncertainties as knowable risks a recipe for greenwash\*](#)

Table 1: Feasibility of different types of analysis of physical climate risks

Risk	Time scale	Individual building	Metropolitan area	Region/sub-continental	Global
<b>Acute</b> Volatility – event-driven, such as floods, bushfires  Selected losses at future time periods can be modelled within strict limitations	1-10 years	If sufficient data on extent of current vulnerabilities	If sufficient data on extent of current vulnerabilities and exposure factors have been adequately mapped	Can be aggregated from finer scale data from natural perils loss records and other sources for G20 nations	Availability of data on vulnerabilities for non-G20 jurisdictions may limit analysis
	10-30 years	Qualitative insights can be drawn for specific risks linked to exposure and localised vulnerabilities		Qualitative insights can be drawn for some meso-scale events (such as tropical cyclones) as the incidence, frequency and duration are not thought to changes on the decadal timescale	
	30-50 years	Uncertainty driven by non-stationarity dominates			
<b>Chronic</b> Long term trend – such as sustained higher temperatures	1-10 years	High uncertainty as climate influence cannot be differentiated from natural variability over the next 10 years			
	10-30 years	If the hazard can be combined with information on exposure and existing vulnerabilities		Level of confidence varies by hazard	
	30-50 years	If the hazard can be combined with information on exposure and existing vulnerabilities		Level of confidence varies by hazard	

<b>Key</b>	Quantitative risk analysis possible	Can be addressed qualitatively	Uncertainty dominates: can only be addressed adequately by the use of scenario analysis underpinned by climate change projections
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# Responses to consultation questions

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Here we provide responses to selected questions. We have focused primarily on questions as they relate to physical climate risk analysis and management.

**Question 1: What are the costs and benefits of Australia aligning with international practice on climate-related financial risk disclosure (including mandatory reporting for certain entities)?**

**1.1 What are the costs and benefits of meeting existing climate reporting expectations?**

**1.2 What are the costs and benefits of Australia not aligning with international practice and in particular global baseline standards for climate reporting?**

We see limited benefits in meeting existing climate reporting expectations, which lack clarity and are in the process of changing rapidly.

There are benefits to alignment with programs under development internationally in terms of reduced friction and inconsistency in reporting across multiple jurisdictions. We consider these benefits relatively minor in comparison with the potential benefits to Australia of a climate disclosure regime that enables investors and other readers to form an accurate view of the degree to which the disclosing entity understands and manages its climate risk exposure.

As the draft ISSB Climate Disclosures standard is explicitly designed as a floor for climate disclosure expectations and practice, Australia should aim not only to align with the ISSB standard but to exceed it. The ISSB standard as currently drafted does not provide sufficient ambition or clarity with regard to physical risk analysis and disclosure to address the weaknesses we have identified above. It does, however, provide a valuable starting point for a new disclosure regime.

**Question 2: Should Australia adopt a phased approach to climate disclosure, with the first report for initially covered entities being financial year 2024-25?**

**2.1 What considerations should apply to determining the cohorts covered in subsequent phases of mandatory disclosure, and the timing of future phases?**

Deciding how to stage entities' mandated inclusion in the regime requires attention to:

- urgency, defined as entities that need to disclose because they represent major sources or vectors of climate risk to the Australian economy and/or financial system
- capability, defined as entities' capacities to disclose. This is influenced not just by entities' own resources but also by the availability of external resources, such as data and assurance capability.

Australian companies and service providers are well-practiced in disclosing emissions data, and have started to develop experience in disclosing transition risk. Relatively few companies and service providers have addressed physical risk analysis and disclosure to an equivalent, let alone adequate, level.

This suggests that the first phase of mandatory disclosure could set more stringent

requirements for climate risk analysis than for physical risk analysis. However, it is important that the regime signpost rapid future development of disclosure requirements to cover physical risk analysis in more depth.

It would be reasonable for subsequent cohorts to start at the same level of disclosure as the initial cohort, but for disclosure requirements for all cohorts to become more stringent over time. The timing of these phases should be determined with reference to the ability of subsequent cohorts to learn from the experience of earlier cohorts, and the development of supporting data, analytical capabilities and information that will be necessary to help smaller entities satisfy the disclosure requirements without undue cost.

**Question 3: To which entities should mandatory climate disclosures apply initially?**

**3.1 What size thresholds would be appropriate to determine a large, listed entity and a large financial institution, respectively?**

**3.2 Are there any other types of entities (that is, apart from large, listed entities and financial institutions) that should be included in the initial phase?**

Entities with the greatest capability to meet disclosure standards are Australia's largest listed companies as they already have experience in detailed financial disclosure. It is more difficult to judge ex ante which entities represent major vectors of climate risk, but emissions production is a good proxy for transition risk at least, while market capitalization or net tangible assets could be reasonable indicators of importance to the economy or physical exposure, respectively, and therefore indicate potential to be a material vector of physical risk.

We note that about 65% of Australia's national emissions are reported under NGER. But only 108 published NGER reporters are on the ASX – 301 are not. If mandatory climate risk disclosure covers just ASX listed entities, just over 60% of emissions reported under NGER will be excluded. While non-ASX-listed companies may face climate-related financial risk disclosure requirements in another jurisdiction, this is not necessarily the case and leaves significant sources of Australian transition risk out of the disclosure boundary. And even if other jurisdictions have an equivalent regime, for these worldwide companies their Australian operations might only be a small part of the picture, so the Australia-specific detail gets lost in the bigger picture.

This implies that including NGER reporters is necessary (though not sufficient) for investors to get an accurate picture of transition risk in the Australian economy.

On this basis, the regime should initially cover at least ASX200 and NGER reporting companies, and potentially other unlisted companies with annual revenues over a certain threshold. Coverage should expand in subsequent phases to include important economic actors not covered by these categories.

**Question 4: Should Australia seek to align our climate reporting requirements with the global baseline envisaged by the International Sustainability Boards?**

**4.1 Are there particular considerations that should apply in the Australian context regarding the ISSB implementation of disclosures relating to: governance, strategy, risk management and/or metrics and targets?**

**4.2 Are the climate disclosure standards being issued by the ISSB the most appropriate for entities in Australia, or should alternative standards be considered?**

The ISSB baseline climate disclosure standard is explicitly designed as a basis for further development. As such, Australia should seek to exceed the requirements of the ISSB standard. Particular considerations in the Australian context regarding the ISSB disclosure requirements are as follows:

Governance – ISSB's draft climate disclosures standard goes beyond common Australian practice in the following areas:

(c) how the body ensures that the appropriate skills and competencies are



available to oversee strategies designed to respond to climate-related risks and opportunities;

We note that a recent survey by AICD of Australian company directors found fewer than half of respondents thought that their boards had “the knowledge and experience to adequately address the climate governance issues facing our organisation”<sup>14</sup>. Only 14% had included climate competence in a skills gap analysis of the board. Meanwhile, the only action taken by more than half of respondents to address climate risk was “reduce waste” (71%), an action whose link with climate risk mitigation is somewhat tenuous. These results chime with our concerns that a major governance risk is that many company directors don’t know what they don’t know, and that understanding physical climate risk is likely to be one of boards’ biggest unknowns. Establishing clear criteria for “Appropriate skills and competencies” will be necessary to ensure adequate governance of disclosure against this requirement.

(e) how the body and its committees consider climate-related risks and opportunities when overseeing the entity’s strategy, its decisions on major transactions, and its risk management policies, including any assessment of trade-offs and analysis of sensitivity to uncertainty that may be required

To date we have seen very little disclosure of the more complex aspects of climate risk assessment in the Australian climate reporting context. These include the need to address deep uncertainty in the full extent of information provided by climate change science, the inclusion of urgency as a decision factor (see the UK’s Third Climate Change Risk Assessment (CCRA3)<sup>15</sup>) and the internal consistency between transition and adaptation strategies. Given the apparent lack of appropriate skills, it is not clear that such assessments and analyses are able to be considered by most Australian company boards. Again, it will be necessary for clear guidance to be provided on what these elements require.

Strategy – The ISSB standards include the requirement to disclose “climate resilience” of the entity’s business strategy, on the basis of climate-related scenario analysis.

The problem with assessing an entity’s climate resilience on the basis of its scenario analysis is that few publicly available scenarios address physical risk, and none of them capture the full range of physical risks to which Australia is exposed, including complex and compound risks particularly at the spatial scales of assets. Scenarios produced by the IEA exclude physical risk completely, while the scenarios produced by the Network on Greening the Financial System include a limited range of a limited set of risks. The NGFS scenario set, for example, does not include a scenario that explores >4°C warming. IPCC scenarios do explore higher levels of warming, but exclude the physical impacts of climate change from their socio-economic variables<sup>16</sup>.

Australia-specific scenarios (see also our responses to Q13 and Q14) should align with key parameters of these international scenario sets, but should try to not replicate their gaps and weaknesses. Developing Australia-specific scenarios that provide internal consistency between economic activity, policy action and physical climate will be more valuable than scenarios designed merely to fill in the Australian details of international scenarios.

When it comes to assessments of climate resilience, Australia’s disclosure regime should require companies to disclose what they have not assessed as well as what they have assessed (and explain why), in order to give a more robust presentation of their understanding of their risk exposures and resilience.

<sup>14</sup> *AICD | Climate Governance Study: Risk and opportunity insights from Australian directors*

<sup>15</sup> *UK Climate Risk*

<sup>16</sup> This is because the Shared Socioeconomic Pathways were designed to consider the potential scale of the climate mitigation task across different “baselines”, rather than to consider the interaction of transition and physical climate risks.

**Question 5: What are the key considerations that should inform the design of a new regulatory framework, in particular when setting overarching climate disclosure obligations (strategy, governance, risk management and targets)?**

Two considerations that need to be balanced are clarity and flexibility. As we note above, the disclosure regime will need to evolve over time. This demands flexibility be built into the regulatory structure. However, each phase of the disclosure regime needs to provide clear and specific expectations regarding exactly what companies need to disclose.

**Question 7: What considerations should apply to materiality judgements when undertaking climate reporting, and what should be the reference point for materiality (for instance, should it align with ISSB guidance on materiality and is enterprise value a useful consideration)?**

Some physical risks may be clearly material to an entity, particularly if past experience has shown an enterprise is exposed or vulnerable to a climate hazard. However, determining the materiality of other physical risks may be more difficult to do, particularly if, for example:

- the exposure or vulnerability is in the supply chain or otherwise outside the physical footprint of the enterprise
- the impact is an indirect consequence of the physical risk
- the climate hazard has not yet triggered significant operational interruptions
- the future scale and/or frequency of the climate hazard is uncertain and will likely remain so due to fundamental uncertainties within climate science

Excluding further analysis of climate risks because they appear to be immaterial could lead companies to fundamentally misunderstand their risk exposure. Recent ISSB discussions of scenario analysis propose to accommodate different levels of analysis on the basis of the materiality of climate risks: “An entity’s approach to climate-related scenario analysis should be commensurate with its exposure to related risks and opportunities. If an entity has identified few or relatively insignificant climate-related risks and opportunities that could reasonably be expected to affect its ability to achieve its business objectives, the entity and its investors are less likely to benefit from a quantitatively complex or technically sophisticated exercise undertaken to inform the assessment of the entity’s climate resilience”<sup>17</sup>.

This means that the materiality assessment will define the scope of the company’s further climate-related risk analysis. This produces appropriate results only if the materiality assessment is sufficiently robust.

We note that the ISSB’s draft sustainability standard defines materiality with reference to disclosure users’ decision-making – “Information is material if omitting, misstating or obscuring that information could reasonably be expected to influence decisions that the primary users of general purpose financial reporting make on the basis of that reporting”<sup>18</sup> – which presupposes that users have an appetite for and know what to do with an entity’s physical risk information.

We believe that few disclosure users are sufficiently climate literate as yet to drive physical risk materiality judgements except in the case of the most obvious climate hazards, and that guidance on determining materiality for, for example, “second-round effects, potential climate non-linearities, and the costs and potential further externalities from risk management measures taken by financial and non-financial firms”<sup>19</sup> needs to be

<sup>17</sup> *IFRS / ap4a climate-related disclosures using scenario analysis to assess climate resilience*

<sup>18</sup> *Exposure Draft on IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information*

developed.

**Question 8: What level of assurance should be required for climate disclosures, who should provide assurance (for instance, auditor of the financial report or other expert), and should assurance providers be subject to independence and quality management standards?**

The assurance of financial statements and other disclosures by independent and qualified third parties is a critical component of market and financial regulation. However, the disclosure of climate risks beyond historical Scope 1 and 2 emissions data presents new forms of complexity that auditors lack expertise in. These include the forward-looking nature of the subject matter, the lack of established assurance techniques that can deal with the external sources of complicated information (e.g., CSIRO climate data), and the existence of counterfactuals from new areas of research such as flooding risks that may directly contradict entity statements. Further, assurance requires auditors to engage with multi-dimensional data sets when they are typically only accustomed to dealing with a single dimension.

The need for new approaches to assurance in this area underscores the importance of ensuring that such assurance can be trusted. Quality management needs to be built into new approaches and their deployment, to ensure that assurance of climate-related financial disclosures are independent and of the highest quality.

**Question 9: What considerations should apply to requirements to report emissions (Scope 1, 2 and 3) including use of any relevant Australian emissions reporting frameworks?**

Australia's NGER scheme provides a framework for reporting scope 1 and 2 emissions that can be extended immediately to non-NGER entities. A similar Australia-specific scope 3 scheme should be developed over time to ensure consistency. In the meantime, scope 3 should be reported in alignment with the GHG Protocol as this is the de facto framework that many companies in Australia are using. It is also encoded in the Australian Government's own Climate Active program. It is however not sufficient to support adequate understanding of transition risks for all sectors. We note that scope 3 guidance for specific sectors is being developed by many entities (e.g. the Partnership for Carbon Accounting Financials (PCAF)), but that this process is not comprehensive, leading to gaps and inconsistencies in scope 3 estimates and methods.

While scope 3 data quality is highly variable, and reporting expectations will need to accommodate this, over time, disclosure requirements should also encourage a shift from proxy-based estimates to entity-specific data in order to track the effects of companies' scope 3 emissions reduction efforts.

**Question 10: Should a common baseline of metrics be defined so that there is a degree of consistency between disclosures, including industry-specific metrics?**

The FSB's Roadmap for Addressing Financial Risks from Climate Change<sup>19</sup> and the ISSB draft industry-specific metrics<sup>20</sup> are heavily weighted toward transition risk. In the ISSB's proposed metrics documents, indicators related to some physical risks appear in the draft metrics of some industry sub-segments. For example, flood risk metrics are proposed for real estate, home construction and water treatment infrastructure – but no other infrastructure or transportation sub-sector.

Australia's disclosure regime needs to define a baseline of physical risk metrics relevant to Australia's physical climate risks and tailored for multiple sectors.

<sup>19</sup> *FSB | Roadmap for Addressing Climate-Related*

<sup>20</sup> *IFRS | Exposure Draft ED/2022/S2 Climate-related Disclosure - Appendix B: Industry-based disclosure requirements*

**Question 11: What considerations should apply to ensure covered entities provide transparent information about how they are managing climate related risks, including what transition plans they have in place and any use of greenhouse gas emissions offsets to meet their published targets?**

Transition planning is far more advanced than adaptation (or physical risk management) planning, and can offer some guidance as to how to enhance both transparency and quality of the latter.

There are now multiple credible external parties providing guidance on and transparent methods of calculating the necessary elements of a transition plan and what needs to be reported to track progress against it. These include Science Based Targets Initiative, ISO Net Zero Guidelines, Net Zero Asset Managers Initiative). This enables standard setters to develop disclosure requirements for each necessary element of a transition plan, to accommodate differences among net zero pathways. Necessary elements include:

- emissions target, trajectory and carbon budget
- calculation of deviation from 1.5°C and “well below 2°C” pathways, if not aligned
- investments needed and capital expenditure allocated
- technology assumptions and technology risk mitigation approaches
- approach to carbon offsets use, including consideration of risks associated with offset use, type and source, and risk mitigation strategies.

Physical risk management planning and disclosure should likewise require:

- reference to a credible external party’s adaptation planning framework and criteria
- reference to credible external parties’ methodological guidance and data
- calculations of inherent risk (ie before risk mitigation approaches are applied)
- calculations of the impacts of proposed and potential risk mitigation approaches
- capital allocations toward physical risk mitigation
- calculations and disclosure of residual risk
- key assumptions regarding physical risk drivers, calculations and risk mitigation approaches

Metrics are an important tool for transparency; see also our recommendations for developing physical risk metrics in response to Q10.

**Question 12: Should particular disclosure requirements and/or assurance of those requirements commence in different phases, and why?**

We recommend that phasing be applied to disclosure requirements and assurance expectations as well as to companies covered by the disclosure regime, and that a key consideration for phasing in each of these areas should be the capabilities available to disclosing companies to satisfy the new requirements.

Thus, as it is important and urgent for Australian companies to better disclose the financial implications of their exposure to physical risk, the first phase of mandatory disclosure could focus on encouraging and facilitating physical risk analysis as part of efforts to build capability in this area. However, it is important that the regime signpost rapid future development of more stringent disclosure requirements to cover physical risk analysis in more depth.

**Question 13: Are there any specific capability or data challenges in the Australian context that should be considered when implementing new requirements?**

**13.1 How and by whom might any data gaps be addressed?**

**13.2 Are there any specific initiatives in comparable jurisdictions that may assist users and preparers of this information in addressing these challenges?**

We have identified multiple gaps in physical risk assessment capabilities that will need to be addressed in mandating disclosure of physical climate risk.

- Methodologies for general and sector-specific climate risk analysis should be developed by a multi-disciplinary stakeholder group, such as the CMSI. These should cover materiality assessment, risk assessment and scenario analysis
- Methodologies or guidance for translating scenario analysis results into financial disclosures could be developed by such a group
- Tool accreditation could be done by CSIRO – i.e., “black box” products such as climate adaptation scores could be assessed by climate scientists for the robustness of their use of climate science.

We note that the UK’s Climate Change Risk Assessment 2022 (CCRA3)<sup>21</sup> took a very different approach from the scenario analysis undertaken by the Bank of England<sup>22</sup> and other financial supervisors or regulators. CCRA3 considered 61 groups of physical risks across natural, social, economic and international domains, assessing them in terms of:

- Current level of risk/opportunity
- Future level of risk/opportunity
- Level of risk management expected (“adaptation shortfall”)
- Value of additional action in the next five years (“urgency framework’) that considered short-term needs and risk of lock-in of maladaptation

In addition, CCRA3 undertook across each risk category:

- Low likelihood, high impact assessment
- Qualitative consideration of interactions between the physical risk and decarbonisation goals

The CCRA3 framework builds on the lessons learned from previous UK CCRA3s, and is explicitly designed to produce decision-useful information. We recommend that its findings and approach be considered by disclosure users and preparers as a way of broadening and deepening their physical climate risk analysis.

**Question 14: Regarding any supporting information necessary to meet required disclosures (for instance, climate scenarios), is there a case for a particular entity or entities to provide that information and the governance of such information?**

CSIRO is the best-positioned organization in Australia to produce Australia-specific climate scenarios. CSIRO has the physical climate models and data sets as well as deep multidisciplinary expertise across transition scenario modelling. However, it would be worth building a scenario development capability that draws on multiple other organisations as well. AEMO’s Integrated System Plan is an example of detailed system-specific scenario modelling that has a clear real-world application. Importantly, AEMO’s scenarios can be “plugged in” to scenario analysis undertaken outside the electricity sector. Similar system-specific scenario modelling should be developed across other key Australian sectors.

<sup>21</sup> *Technical Report – UK Climate Risk*

<sup>22</sup> *Key elements of the 2021 Biennial Exploratory Scenario: Financial risks from climate change | Bank of England*

# Document control

Quality assurance covers all dimensions of Energetics' customer offering. All documents produced are reviewed by senior subject matter expert before being presented to clients. Below is a record of the consultants and subject matter expertise involved in the development and quality assurance of this document.

Description	Prepared by	Reviewed by	Approved by	Approval date
Content review	Olivia Kember Dr Nick Wood	Stephen Catchpole Dr Peter Holt Dr Mary Stewart Dr Ghislaine Platell	Dr Peter Holt	22 February 2023
Brand integrity review	Olivia Kember	Amber Jones	Amber Jones	22 February 2023

# Sustainability at Energetics

Sustainability is core to Energetics' business. We became a 'Climate Active' certified organisation in 2019, adding our services to the certification in 2020, and in 2021 we verified our SBT through the SBTi.



## Information security

In February 2022, we achieved our Information Security Management certification. It's internationally recognised and demonstrates our commitment to protecting all client information and data.



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