Chapter 2

The need for carbon risk disclosure

2.1 The committee received substantial evidence about potential carbon risks. The committee accepts the analysis that the physical risks of climate change, along with the challenge of transition to a lower carbon world, present material risks to Australian businesses. The committee also notes the evidence that rapid changes in price arising from unexpected negative events (including events or trends associated climate change) can result in volatility which under some circumstances can present risks to financial stability.

2.2 This should not be taken to mean that the committee believes that all or even most of the specific risks presented to it by submitters will necessarily eventuate. This is inherent in the nature of risk. Likewise, caution ought to be exercised in assessing the scale and financial significance of these risks. The committee accepts that the most accurate pricing of these impacts is likely to be provided by the market in an environment characterised by disclosure of relevant information.

2.3 The committee considers that there are different ways that businesses can effectively respond to carbon risks, and does not consider this report to be an appropriate vehicle for dictating which particular methods should be adopted. Instead, the focus of this committee is on the *a priori* need for businesses to have strategies for managing carbon risk, that are informed by proper analysis (and disclosure of) the risks facing them.

2.4 This chapter sets out the rationale for corporate disclosure, and some of the key forms of carbon risk facing Australian businesses.

Corporate disclosure

2.5 Investors need to be fully informed about the circumstances of a company in order to make optimal decisions about where to invest. Investment opportunities can be assessed only if all the relevant information is available. As one submission puts it, 'Disclosure is the oil in the engine of the financial system'.[1]

2.6 Investors may have reasons other than profit maximisation for wanting information. For example, the ethical, environmental or distributional consequences of the actions of a company they are thinking of investing in may be material to them, regardless of financial returns.

2.7 Governments may also require information for policy or administrative reasons. For example, they may need information about carbon emissions in order to manage them or to demonstrate that they are meeting international targets.

2.8 This report considers only the financial risk associated with carbon, and only incidentally considers the values involved in amelioration of carbon emissions.

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1 Investor Group on Climate Change, *Submission 28*, p. 19.

2.9 Firms have an incentive to disclose some information in order to attract investment.[2] Further, a lot of information is available from other sources.[3]

2.10 However, there is an asymmetry in the relationship between the firm and potential investors. A firm has access to all of its operating information, whereas in the absence of disclosure investors do not know what information is available, and will incur costs in obtaining information that they seek.

2.11 There is also an agency problem. Investors generally do not play a direct role in the management of a firm. The interests of the managers of the firm do not necessarily coincide with those of the investors.[4] In particular, the time horizons of investors and directors may be quite different.[5] For example, many bonus payments for managers and directors are based on short-term performance measures.

2.12 Adequate information is also critical in supporting financial stability. At the macroeconomic level, financial stability exists when 'financial intermediaries, markets and market infrastructure facilitate the smooth flow of funds between savers and investors and, by doing so, help promote growth in economic activity'. Safeguarding financial stability involves reducing vulnerabilities in the economy, and these vulnerabilities are often associated with how financial market participants price and manage risk.[6]

2.13 Risk is measured by the likelihood that an event will happen, weighted by the consequences of its happening. Thus the risk posed by an extremely unlikely but catastrophic event may be the same as that posed by a more probable but less disastrous event.[7]

2.14 Market participants cannot price risk accurately without full information disclosure. For example, estimates of the value of an asset can be weighted by the risk of loss or damage to that asset. This requires transparency as to risk. Transparency takes the form of corporate disclosures to investors.

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2 Many of the disclosure mechanisms discussed in the next chapter work on a voluntary basis. In total they account for a large proportion of global capital.

3 The Smith School of Enterprise and the Environment, *Submission 4*, [p. 4], reports detailed studies of corporations' carbon risk from sources other than corporate reporting or carbon disclosure frameworks.

4 Paul M Healy and Krishna G Palepu, 'Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature', *Journal of Accounting and Economics*, 31, 2001, pp. 405–440.

5 Australian Centre for Corporate Responsibility, *Submission 5*, [p. 2].

6 Reserve Bank of Australia, *About Financial Stability*, http://rba.gov.au/fin-stability/about.html (accessed 25 January 2017).

7 Robert A Jaeger, *Risk: Defining It, Measuring It, and Managing It*, Evaluation Associates Capital Markets, Inc., November 2000, p.1, http://viking.som.yale.edu/will/hedge/Risk_BobJaeger.pdf (accessed 25 January 2017).

2.15 Financial stability may be threatened when events which were unanticipated or the risk of which was underestimated impact upon the economy, causing sudden, sharp price adjustments.

2.16 Because of the asymmetry and agency problems, governments have often mandated disclosure of relevant information including financial statements. The objective is to ensure that investors are able to compare the returns available to them, and to see if a firm is managed well. By ensuring that individual investors are informed, disclosure rules assist in the efficient allocation of capital throughout the economy, as well as supporting financial stability by minimising potential for rapid, destabilising price adjustments.

2.17 In addition, various bodies with interest in, or responsibility for, corporate performance also require some levels of disclosure. For example, stock exchanges and professional organisations may have such rules.

2.18 In deciding whether and how to mandate disclosure, governments—and other bodies with the power to demand disclosure—have to decide what information should be disclosed, in what level of detail, and over what time horizon.

2.19 To be useful in decision making, information disclosed by companies must be 'consistent, reliable, comparable and clear'.[8]

2.20 In recent years there has been a trend towards making disclosure more uniform, and aligning Australian financial disclosure with overseas norms, through the work of the Australian Accounting Standards Board and the adoption in 2005 of the International Financial Reporting Standards.[9]

2.21 There is some evidence that higher levels of disclosure are associated with better individual corporate performance, although it is difficult to separate the effects of disclosure from actual performance, and to allow for selection bias where voluntary disclosure is involved.[10] CPA Australia acknowledges these difficulties in reporting its own study, which also showed very positive effects from 'solid ESG practices', that is, sound practices for reporting on environmental, social and governance performance.[11]

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8 Task Force on Climate-Related Financial Disclosures, *Recommendations of the Task Force on Climate-Related Financial Disclosures*, 14 December 2016, p. 2, https://www.fsb-tcfd.org/wp-content/uploads/2016/12/16_1221_TCFD_Report_Letter.pdf (accessed 27 January 2017).

9 Australian Accounting Standards Board, *The Standard-Setting Process*, http://www.aasb.gov.au/About-the-AASB/The-standard-setting-process.aspx (accessed 25 January 2017).

10 These seem to be problems in many of the studies cited in CDP and Climate Disclosure Standards Board, *Submission 22*, pp. 10–11.

11 CPA Australia, *Submission 33*, p. 4.

2.22 One result of improved disclosure appears to be a focusing of attention which leads to different ways of seeing things and thence to innovation and by that means to better corporate performance.[12]

What is carbon risk?

2.23 Carbon risk is a shorthand term for risks to a company from climate change. It does not refer simply to the immediate effects of climate change itself, but also to the financial effects of regulatory change or changes in expectations.

2.24 The Prudential Regulation Authority of the Bank of England has developed a categorisation of climate change risks which has been adopted in several of the submissions to this inquiry. It comprises:

- physical risks, including first-order risks of assets being destroyed by cyclones or agricultural land being rendered useless by prolonged drought, and second-order risks such as disruption to supply chains;
- transition risks, which could arise from the transition to a low carbon economy, for example the risk that it may not be possible to develop coal reserves if carbon pricing renders them uncompetitive with other sources of power; and
- liability risks, where people who suffer damage from climate change seek redress from those they believe are responsible.[13]

Physical risk

2.25 It is difficult to definitively link any specific weather event to carbon emissions. However there is a substantial and growing body of evidence documenting observed changes in weather patterns attributable to anthropogenic warming. They include increases in the number, duration and intensity of heat waves, extreme high sea levels, strong cyclonic winds and an increase in the number of extremely high rainfall events. These translate to health risks, bushfires, and flooding by both rivers and the sea.[14]

2.26 While quantification is difficult, the magnitude of the physical damage that could result from global warming is vast. The effects are already being felt:

> The number of registered weather-related natural hazard loss events has tripled since the 1980s and inflation-adjusted insurance losses from these

12 D Aronson, 'Sustainability Driven Innovation: Harnessing sustainability's ability to spark innovation', 2013, Deloitte, available at: http://www.greenprof.org/wp-content/uploads/2013/12/Sustainability_Driven_Innovation_102513.pdf (accessed 13 February 2017), quoted in CDP and Climate Disclosure Standards Board, *Submission 22*, p. 23.

13 Prudential Regulation Authority, *The impact of climate change on the UK insurance sector*, September 2015, p. 4, available at http://www.bankofengland.co.uk/pra/Documents/supervision/activities/pradefra0915.pdf (accessed 25 January 2017).

14 Intergovernmental Panel on Climate Change, *Climate Change 2014 Synthesis Report Summary for Policymakers*, pp. 7–8.

events have increased from an annual average of around US$10 billion in the 1980s to around US$50 billion over the past decade.[15]

2.27 The damage and loss are partly due simply to the destruction of assets. However, the economic damage caused by disruption of global supply chains, such as occurred when floods in Thailand destroyed factories producing electronic components, can be at least as great.[16]

2.28 The impact of physical events can wash through the financial system. For example, losses that are claimed against insurance can lead insurance companies to refuse insurance to properties in vulnerable areas. This can reduce the value of properties, and if they are held as collateral it can lead to losses by banks. 'Fire sales' of assets by either insurers or banks could lead to further losses in either or both sectors.[17]

Transition risk

2.29 In December 2015, nearly 200 governments agreed to take action to limit the increase in the global average temperature to well below 2°C above pre-industrial levels, and to try to limit it to 1.5°C—the 'Paris Agreement'. The agreement came into force last year after it was ratified by the required number of countries. Each country will decide on particular measures to achieve the targets they have set themselves.[18]

2.30 Transition risks include the risk that regulation intended to reduce carbon emissions will reduce demand for a product. Companies could be affected by regulation in Australia but they may be more exposed to risk from the transitions away from fossil fuel taking place elsewhere.[19]

2.31 There have been various calculations of what the impact of international actions to meet the Paris targets might be. For example, two submissions suggest that for the 2°C goal to be met, 80 per cent of proven fossil fuel reserves would need to remain in the ground in order to limit emissions.[20]

2.32 Should these constraints remain unresolved by technological developments, companies may find themselves with assets whose value is impaired by changing

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15 Prudential Regulation Authority, *The impact of climate change on the UK insurance sector*, September 2015, p. 5.

16 Prudential Regulation Authority, *The impact of climate change on the UK insurance sector*, September 2015, p. 29.

17 Sandra Batten, Rhiannon Sowerbutts, Misa Tanaka (all from Bank of England), 'Let's talk about the weather: the impact of climate change on central banks', paper presented to Bank of England Conference on Central Banking, Climate Change and Environmental Sustainability, 14 November 2016, available at http://www.bankofengland.co.uk/research/Pages/conferences/1116.aspx (accessed 3 February 2017).

18 United Nations Framework Convention on Climate Change, 'The Paris Agreement', http://unfccc.int/paris_agreement/items/9444.php (accessed 23 February 2017).

19 Carbon Tracker Initiative, *Submission 9*, [p. 2].

20 The Middle Way, *Submission 3*, p. 1; Sustainable Business Australia, *Submission 32*, p. 1.

patterns of demand. This will affect not only the companies that own the assets, but also companies and funds that own shares in them.[21]

2.33 Transition risks also include indirect risks, such as the risk of reputational damage, both at a national level and for individual businesses.[22] Consumers may avoid companies and brands which are seen as not behaving responsibly.

2.34 In the extreme case, trade or other sanctions could be imposed where a country is perceived as not bearing its share of the cost of emissions reduction. The National Institute of Economic and Industry Research assesses the risk of punitive measures against Australia as greater than 50 per cent.[23]

Liability risk

2.35 In addition to physical and transition risk, further risks to companies could arise where it is found that directors of companies or trusts financially or otherwise affected by carbon risk could have, but did not, take steps to reduce their exposure to that risk or, more importantly, did not disclose that risk.

2.36 A legal opinion obtained by the Centre for Policy Development concludes:

> …it is likely to be only a matter of time before we see litigation against a director who has failed to perceive, disclose or take steps in relation to a foreseeable climate-related risk that can be demonstrated to have caused harm to a company…[24]

2.37 As noted above, it is difficult to link specific events or actions to specific climate-related events. However, it is conceivable though in no way certain that, in the future, carbon extracting and using firms could be held responsible for damage due to climate change.

2.38 The Financial Stability Board's Task Force on Climate-related Financial Disclosures, in its Recommendations Report, includes a useful summary of analyses of sectors and industries affected by climate related risks.[25]

Australian exposure to carbon risk

2.39 The committee heard evidence that as a resource dependent economy, Australia is arguably particularly highly exposed to carbon risk.

2.40 Coal is our second biggest export, after iron ore, and constitutes over 11 per cent of exports by value. Natural gas is our fifth biggest export.[26] Although

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21 CDP and Climate Disclosure Standards Board, *Submission 22*, p. 6.

22 The Middle Way, *Submission 3*, p. 1.

23 Quoted in CPA Australia, *Submission 33*, pp. 3–4.

24 Centre for Policy Development, *Submission 34, Attachment*, p. 22.

25 Task Force on Climate-related Financial Disclosures, *Recommendations of the Task Force on Climate-related Financial Disclosures*, p. 30, https://www.fsb-tcfd.org/wp-content/uploads/2016/12/16_1221_TCFD_Report_Letter.pdf (accessed 21 February 2017).

there will be some level of continuing need for coking coal, both thermal coal and natural gas are likely to see reductions in demand as the Paris targets are implemented. A submission to this inquiry asserts that 'The seaborne thermal coal market is in structural decline.' It estimates that up to US$70 billion of investment planned for the next decade in fossil fuel is unneeded, and assets could be stranded.[27]

2.41 Agriculture is also exposed to climate risk. The World Economic Forum has warned that global warming has put agricultural productivity in Australia at risk.[28] For example, modelling has suggested that an increase in average temperatures of more than 2°C would see the majority of agriculture in the Murray-Darling basin wiped out.[29]

2.42 Over 5 per cent of Australia's exports—$16 billion a year—is accounted for by 'Personal travel (excluding education) services', mostly tourism, making it the sixth biggest export.[30] Domestic tourism is also an important contributor to GDP. Specific tourist attractions like the Great Barrier Reef are endangered in the long term by climate change.[31] Tourism can be temporarily disrupted by cyclones and floods.[32]

2.43 A large component of the nation's savings is held by superannuation funds. One submission notes that 'the average Australian pension fund maintains investments in the causes of climate change, leaving it exposed to carbon risk'.[33] The UK Prudential Regulation Authority has observed that for these entities, it is not easy to deal with carbon risk by the usual methods of diversification and hedging, because the risk is systemic.[34]

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26 Department of Foreign Affairs and Trade, '*Australia's Top 25 Exports, Goods and Services, 2015–16*', available at http://dfat.gov.au/trade/resources/trade-statistics/Pages/trade-statistics.aspx (accessed 1 February 2017).

27 Carbon Tracker Initiative, *Submission 9*, p. 2.

28 World Economic Forum, *Global Risks Report 2016*, p. 51, quoted in CPA Australia, *Submission 33*, Appendix, p. 3.

29 Modelling for the 2008 Garnaut Review, quoted in Centre for Policy Development, *Submission 34, Attachment*, p. 8.

30 Department of Foreign Affairs and Trade, '*Australia's Top 25 Exports, Goods and Services, 2015–16*', available at http://dfat.gov.au/trade/resources/trade-statistics/Pages/trade-statistics.aspx (accessed 1 February 2017).

31 Allison Anderson, 'Climate change, tourism and the Great Barrier Reef: what we know', *The Conversation*, 27 May 2016, https://theconversation.com/climate-change-tourism-and-the-great-barrier-reef-what-we-know-60108 (accessed 1 February 2017).

32 David Bierman, 'Danger in paradise: resurrecting tourism after natural disasters', *The Conversation*', 4 January 2012, https://theconversation.com/danger-in-paradise-resurrecting-tourism-after-natural-disasters-3827 (accessed 1 February 2017).

33 The South Pole, *Submission 8*, [p. 4].

34 Prudential Regulation Authority, *The impact of climate change on the UK insurance sector*, September 2015, p. 51.

2.44 Small investors—self-managed superannuation funds and individuals—may be at greater risk because they do not have access even to those methods of diversification. They may not be able to purchase, or have the skills to analyse, the data that big investors use.