

FINANCED EMISSION,  
'UNBURNABLE CARBON' RISK  
AND THE  
MAJOR AUSTRALIAN BANKS

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# **Financed emissions, ‘unburnable carbon’ risk and the major Australian banks**

**October 2014**

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(ACCR)**

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## Glossary

**Custodians:** companies who hold assets on behalf of the ‘underlying’ owners. The custodian is the legal but not beneficial holder of the asset. Public offer super funds, managed funds, government bodies, will often use a custodian.<sup>2</sup>

**Fiduciary duty:** a term commonly used in discussions of finance to encompass the duties of asset owners to act in the interests of their investors. In Australia there are only two fiduciary duties - the no conflict rule and the no profit rule. In other countries fiduciary duty is interpreted more expansively. A substantial number of legal relationships are fiduciary in nature, including director/company, executor/heir and trustee/beneficiary.<sup>3</sup>

**Financed emissions:** the greenhouse gas emissions, attributed to a financial institution as a consequence of the loans it has financed, the operations of businesses it has invested in etc. These emissions are distinguished from those resulting from the institution’s own physical operations. See Appendix A for more detail.

**Passive management:** an approach to portfolio construction which eschews any active assessment of the merits, advantages or problems of particular companies. The most common form of passive management is "market capitalisation weighting". Passive managers often won't exercise their voting rights.. From a social perspective passive managers are “bludgers”; they take the benefits of share ownership without accepting the responsibilities.

**Risk ‘treatment’:** in the jargon of risk management, risks are typically evaluated pre-and post-treatment. Initially risks are rated ‘pre-treatment’ according to their likelihood and severity of potential impact on the business. Then, they are rated ‘post-treatment’ accounting for all the mitigation strategies currently in place.

**Stranded:** an economic term used to describe an asset which loses economic value prior to the expiry of its useful life. For example, if you remove a working incandescent light bulb, throw it out and replace it with a compact fluoro or LED bulb, the incandescent bulb has been “stranded”.

**Trustee duty:** in Australia most pooled wealth management vehicles, including superannuation funds and managed funds, are structured as trusts. Formally, the investors are beneficiaries. The trustee has duties to the investors which are set out in the trust deed, included in the deed by force of statute, imposed by statute and under common law. Further, statute law may impose trustee like duties on individual officers and employees of the trustee company.

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<sup>2</sup> See [http://www.custodial.org.au/public\\_panel/faqs.php](http://www.custodial.org.au/public_panel/faqs.php) for more detail.

<sup>3</sup> Even in the Australian context the term ‘fiduciary’ is now used to ‘represent a broader set of expectations than that which is connoted by the term strictly at law’. See Donald, *S Regulating for fiduciary qualities of conduct* in *Journal of Equity* (2013) 7 p 156.

## Executive Summary

The top four Australian banks all ‘have a policy’ recognising the significant impact of climate change. Oddly, little detail is readily available to the bank’s shareholders quantifying the practical implications of this recognition. This paper assesses three sources of exposure of the top four Australian banks to ‘unburnable carbon risk’ resulting from each bank’s own ‘financed emissions’ - emissions attributable to businesses they part own or lend to. Those three sources of exposure are: credit risk exposure, equities market risk exposure and regulatory, reputational and legal exposure. From the information publicly available in regard to these three sources of risk it appears that at least three of these banks have a prima facie material exposure. WBC may not and ANZ and the CBA are the most exposed. However, none of these banks provide much disclosure to shareholders quantifying the extent of the risks faced by shareholders.<sup>4</sup> None of these banks disclose their financed emissions, and none of them have a public target to reduce those financed emissions.

## Introduction

This paper deals with the exposure of the major Australian banks to ‘unburnable carbon’ risk as a consequence of their financed emissions.<sup>5</sup> In other words, it considers the risk that the fossil fuel emissions the banks finance will become a problem for them because of the world’s fossil fuel budget. The paper has four sections.

The first section describes a basic intellectual fallacy of composition exhibited by financial markets today. This is their failure to take into account the fact that fossil fuel reserves exceed the UN-agreed carbon budget by a factor of three. This gives rise to an ‘unburnable carbon’ risk akin to a speculative bubble. At some point in the future, large-scale write-downs of fossil fuel assets are almost inevitable.

The second section provides some background to assist with assessment of the magnitude of this risk. The third section describes the sources and quantum of exposure of the major Australian banks.

The final section assesses the potential impact of the ‘unburnable carbon bubble’ bursting on these banks and the nature of their current response to that risk.

Appendix A describes an international protocol which provides a framework for the measurement and categorisation of business emissions including financed emissions. Appendix B describes sources and methods for the estimation of on balance sheet loan exposure to carbon intensive businesses.

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<sup>4</sup> That is not to say there is no disclosure. For example, Westpac’s ‘Progress Report on our Climate Change Position Statement’ contains a description of their approach to risk mitigation but no quantification of financed emissions.

<sup>5</sup> It does not deal with other dimensions of climate change risk exposure of the banks, for example, the risks of increased loan default by farmers and agribusiness in the event crop yields fall.

# 1. Economic background – there is a high likelihood of asset stranding<sup>6</sup>

Under the United Nations Framework Convention on Climate Change countries have agreed that 2° C of global warming is the maximum acceptable upper threshold. This agreed ceiling sets a ‘budget’ on worldwide fossil fuel emissions. Current fossil fuel business valuations involve a fundamental intellectual ‘fallacy of composition’. Investor's expectations cannot be met as they have become divorced from physical reality and committed policy response. Currently, in aggregate, fossil fuel companies are estimating with 90% certainty that they will be able to extract freely (for subsequent sale and combustion) over three times more carbon than is compatible with the internationally agreed ceiling. This contradiction is referred to as the ‘unburnable carbon bubble’.

Currently, in the preparation of accounts and assessments of projects the auditors, boards and financiers of many fossil fuel businesses assume the prices they will receive and the quantum of reserves they can extract will be unaffected by this agreed threshold. Effectively, it seems that they assume either global climate change response negotiations will break down permanently and completely; or that individual country responses will cease; or that all state-owned reserves will be locked up. These scenarios seem very unlikely.

Clearly the problem of unburnable carbon needs addressing but, as with tariff protection, initially there will be winners and losers. Everybody will be better off if this problem is addressed but initially some countries and businesses will be a lot worse off, so the political process of recognising the need for physical constraint of emissions is slow and difficult. However, slowly escalating regulatory action, reduced fossil fuel subsidisation<sup>7</sup> and socio-political stigmatisation, particularly of thermal coal extraction and use, are all bringing mounting pressure on the ‘carbon bubble’. Whether it will burst with a sudden bang, a long slow whimper or some combination of both is not yet clear.

Because they finance emissions, the four major Australian banks have three potential sources of exposure to this ‘unburnable carbon bubble’ risk:

- On balance sheet loss resulting from (a) credit risk exposure in the event of debt default or (b) equity write-down on bank-owned assets;
- Equities’ market-risk exposure in the event of significant write-downs of the market value of the equity in reserve owners and extraction businesses, fossil fuel generators and companies whose clientele is substantially drawn from these businesses. Write-downs affecting the banks could result from equity holdings by their (a) defined benefit super funds or (b) insurance operations;

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<sup>6</sup> For a more extensive discussion of public policy, investment risk and company valuations see *Climate proofing your investments: moving funds out fossil fuels*, TAI, March 2014 at <http://www.tai.org.au/content/climate-proofing-your-investments-moving-funds-out-fossil-fuels> .

<sup>7</sup> Which, globally, exceed renewable subsidies by about a factor of 6, see <http://newclimateeconomy.net/content/press-release-economic-growth-and-action-climate-change-can-now-be-achieved-together-finds> .

- regulatory, reputational and legal risk exposure most likely stemming from their trustee and fiduciary duties as (a) custodians or (b) wealth managers in the event their risk management is found wanting.

Section 2 provides some background to assist with the assessment of the magnitude of these risks which are further described in section 3.

## **2. Credit ratings, comparative international share market exposure and ASX 200 trading company classification**

With regard to credit risk exposure, the ratings agency Standard and Poor's has assessed the potential impact of unburnable carbon risk on the oil and gas sector. They comment that, '...for the smaller companies, we see a deterioration in the financial risk profiles... to a degree that would potentially lead to... downgrades over 2014-2017. The effect on the majors would be more muted...' <sup>8</sup> This conclusion is likely to have broader applicability. A specialist reserve owner or pure play extraction business is more likely to face business pressures which result in default than a diversified company with both fossil fuel and non-fossil fuel operations.

In regard to listed equities risk exposure there is a very broad range of 'carbon reserve intensity' (embedded emissions per unit of market capitalisation) across world share markets. Japan, Germany and Sweden have stock markets with emissions intensities beneath the average global intensity which is compatible with a 2° C safe budget. By contrast, the UK stock market has a fossil fuel 'embedded emissions' intensity almost a factor of 10 times larger than that consistent with the 2° C budget and Russia's MICEX intensity is close to 50 times the 2° C compatible budget. The intensity of the Australian, French and US markets are about world average. But still, they are three to four times the 2° C compatible budget.

Within the Australian equity market (the ASX) it is useful to classify companies according to the nature and extent of their exposure. Table 1 below categorises ASX 200 companies into 4 tiers according to the extent of their business reliance on fossil fuels. Note that not all these companies are predominantly reserve owners. For example, the tier 2 companies are generators or 'gentailers' (though AGL is also the 56th largest global coal company by reserves.)

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<sup>8</sup> See p 2 [http://www.carbontracker.org/wp-content/uploads/downloads/2013/03/SnPCT-report-on-oil-sector-carbon-constraints\\_Mar0420133.pdf](http://www.carbontracker.org/wp-content/uploads/downloads/2013/03/SnPCT-report-on-oil-sector-carbon-constraints_Mar0420133.pdf) . See also [www.carbontracker.org/oilcostcurve](http://www.carbontracker.org/oilcostcurve) for a discussion of the underlying economic drivers of this conclusion.

**Table 1: Categorisation of ASX 200 companies and cumulative weight in the index**

Category	Cumulative weight in ASX 200 <sup>9</sup>	Companies
<b>Tier 1: substantially involved in fossil fuel extraction</b>	6%	Woodside, Origin, Santos, Caltex, Oil Search, Beach Energy, Aurora Oil & Gas, Whitehaven Coal, Karoon Gas, AWE, Senex, Drillsearch, Linc, Aquila Resources, Horizon, Buru Energy, Coalspur
<b>Tier 2: large downstream exposure</b>	7%	Envestra, APA, AGL, Energy World
<b>Tier 3: large absolute, less significant relative exposure</b>	13% <sup>10</sup>	BHP – 66%, Rio - 9%, Wesfarmers - 5% <sup>11</sup>
<b>Tier 4: indirect exposure – fossil fuel businesses substantial amongst clientele</b>	17%	Asciano, Aurizon, Boart, Cardno, Decmil, Downer EDI, Incitec Pivot, Leighton Holdings, Mineral Resources, Monadelphous, NRW, Orica, Qube, Transfield, Transpacific, UGL, Worley Parsons
<b>Memo: Aggregate market capitalisation - ASX 200</b>	\$1.25t	

Based on the table above about 17%<sup>12</sup> of the total market capitalisation of the ASX is exposed to the risk of equity write-down as a consequence of the ‘unburnable carbon bubble’ bursting.

Major factors which make this 17% understated as an indicator of the exposure of owners of the ASX include:

- state-owned reserve holders might not suffer reserve write-downs/constraints pro rata with listed companies. So listed company reserves would have to be written down by more than two thirds;
- other ASX listed businesses might also be affected. For example, more Australian coal reserves are owned by companies not listed in Australia than by those listed on

<sup>9</sup> As at 31/8/2013

<sup>10</sup> The ASX weights of these 3 companies were discounted by the fractions of operating assets (as given) attributable to fossil fuel exposure as provided in their 2012 Annual reports.

<sup>11</sup> By balance sheet composition - equivalent revenue based percentages, in 2012, are BHP: 34%, Rio: 9%, Wesfarmers: 4%.

<sup>12</sup> This fraction is calculated ignoring: derived exposure of listed investment companies and insurers and the indirect exposure of banks.

the ASX,<sup>13</sup> Australian companies providing for example, logistics or labour hire to those companies will likely be affected but they are not included in the calculation;

On the other hand, it may be overstated to the extent:

- many of these companies have some assets and operations which are not highly fossil fuel specific/complementary. For example, an electricity retailer can distribute power however it is generated;
- different fuels and different stages in the production process may be impacted differently. For example, in the next few years, initial policy action might see thermal coal prices received by producers, fall whilst gas prices rise. Gas-fired power generators may then benefit whilst coal mine owners write down the value of their mines.<sup>14</sup>

Section 3 below describes the dimensions of unburnable carbon risk exposure faced by Australian bank shareholders. In the scenario of a sudden, broad-based incorporation of the 2° C budget into market expectations companies worth 17% of the value of the ASX might fall two thirds ie 11.4%.

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<sup>13</sup> See <http://www.climateinstitute.org.au/unburnable-carbon.html> .

<sup>14</sup> The IMF, for example, advocates a tax of about 60% on coal, see *Getting energy prices right* 2014 at <http://www.imf.org/external/np/fad/environ/pdf/c1.pdf> .

### **3. Quantum of underlying exposure and potential impact by source of exposure**

Each of the three sources of exposure described in section 1 has 2 components so there are 6 potential dimensions of major Australian bank's exposure to 'unburnable carbon'. Firstly, loan exposure as a consequence of arranging and/or directly providing debt facilities for fossil fuel intensive projects and businesses. Secondly, direct ownership exposure as a consequence of holding equity in a fossil fuel project or business on the bank's own balance sheet. Each of the major Australian banks has associated funds management operations. So a third source of exposure derives from the debt of, or equity in, carbon intensive businesses held by these funds (on behalf of their investors) and managed by a wealth management arm of the bank. Fourth, banks sometimes act as custodians - legal holders of shares on behalf of the 'real' (beneficial) owners. In this situation the banks have negligible economic control over the assets held. Fifth, each of the major banks have now closed defined benefit staff super schemes which might suffer loss if the bank has to make good in the event the fund holds carbon assets which lose market value. Sixth, each of the banks has insurance operations consolidated into its accounts. These operations hold debt and equity which are likely to include the issues of carbon intensive businesses, so loss on these holdings may reduce bank profit (in the absence of hedging arrangements).

Appendix A describes an international protocol for the measurement of 'financed emissions'. If it were in use by the top four Australian banks it would assist with an assessment of the extent of a bank's exposure and a comparison across banks of relative risk. None of these banks has yet published information on its 'financed emissions'.<sup>15</sup>

As a consequence it is necessary for shareholders to endeavour to make their own assessment of these risks. The underlying dimensions of each of the six sources of exposure described above are quantified (from the perspective of shareholders<sup>16</sup>) in Table 2 below.

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<sup>15</sup> Though, at least 2 (NAB & WBC) are participating in an international process seeking to agree on an international, harmonised, robust methodology for estimation of financed emissions. See Appendix A.

<sup>16</sup> An evaluation from the perspective of depositors would be different. For example, assets related to insurance business are included in the consolidated group balance sheets but they are excluded from risk evaluation for banking prudential purposes because of the requirements for segregation of life office statutory funds. See <http://www.nab.com.au/content/dam/nab/about-us/shareholder-centre/regulatory-disclosures/documents/september-2013-pillar-3-report-final.pdf> p 78.

**Table 2: Major bank prima facie exposure to ‘unburnable carbon’ write-down risk<sup>17</sup>**

Source of exposure	ANZ	CBA	NAB	Westpac
<b>1. On balance sheet debt finance<sup>18</sup> (\$b)</b>	17.5	8.3	6.1	6.3
Bank Equity (\$b)	45.6 <sup>19</sup>	45.5 <sup>20</sup>	46.6 <sup>21</sup>	46.6 <sup>22</sup>
Exposure (% of equity)	38%	18%	13%	14%
<b>2. Direct Ownership</b>	na <sup>23</sup>	na (probably) <sup>24</sup>	na	na
<b>3. Custodial Holdings (\$b)</b>	na	Not separately disclosed	\$765b <sup>25</sup>	na
<b>4. Wealth Management (\$b)</b>	23.4 <sup>26</sup>	169 <sup>27</sup>	27.8 <sup>28</sup>	76.2 <sup>29</sup>
<b>5. Staff super Plan assets<sup>30</sup></b>	1.28 <sup>31</sup>	3.6 <sup>32</sup>	4.8 <sup>33</sup>	1.97 <sup>34</sup>
Inferred/actual equity held, staff super (\$b)	0.51	0.97	1.4 <sup>35</sup>	0.99
<b>6. Insurance assets - total</b>	32.08 <sup>36</sup>	14.36 <sup>37</sup>	75.6 <sup>38</sup>	8.6 <sup>39</sup>
Inferred/actual equity held, insurance (\$b)	17.7 <sup>40</sup>	8.6 <sup>41</sup>	48.1 <sup>42</sup>	5.2 <sup>43</sup>
<b>Memo: Materiality Threshold<sup>44</sup></b>	4%	7%	1%	11%

<sup>17</sup> All references in this and subsequent tables are to the most recent Annual Report unless otherwise indicated. Each of these banks also produce reports compliant with APS 330 but the material is generally too aggregated to be useful for the purposes of this table.

<sup>18</sup> See Appendix B.

<sup>19</sup> p 74

<sup>20</sup> p 73

<sup>21</sup> p 69

<sup>22</sup> p 122

<sup>23</sup> na in this table means not applicable.

<sup>24</sup> CBA was formerly a shareholder in the Hazelwood brown coal fired power station in Victoria. Hazelwood was purchased for \$2.35b from the Vic. government in 1996. CBA wrote its 8% stake down to \$1m in 2010, then made arrangements to sell in 2013.

<sup>25</sup> See p168 note 49 includes investment administration

<sup>26</sup> See p164 note 41 excludes ANZ trustees

<sup>27</sup> CFS, See Note 36 p 143

<sup>28</sup> See note 49, p 168, excludes funds under trusteeship

<sup>29</sup> See p 100 funds under management.

<sup>30</sup> AASB 119 requires employer-sponsors of defined benefit super schemes to recognise the scheme surplus or deficit on the balance sheet. The value of a deficit is estimated as the actuarially estimated present value of obligations less the fair value of scheme assets. The recent revision AASB 119R changed the accounting presentation of the return on plan assets, see <http://www.kpmg.com/AU/en/IssuesAndInsights/ArticlesPublications/Flash-Reports/Documents/13ru-016.pdf>. This may impact the annual accounting presentation of return on plan assets but it doesn't change shareholders long-term exposure to the value of these assets.

<sup>31</sup> See p 169, note 44, of this \$1.28b 40% was held in equities, see p 171.

<sup>32</sup> See Note 41 p 168, of this \$3.6b 12.6% was held in Aust equities & 14.5% in overseas markets, total equities was 27%.

<sup>33</sup> See Note 32 p 118

<sup>34</sup> See Note 35, p 263, of this \$1.97b 50% was held in equities.

<sup>35</sup> See Note 32, p 116.

<sup>36</sup> Of which ANZ discloses \$10.9b are directly in equity assets and a further \$11.4b are in managed investment schemes, see note 48, p 183

<sup>37</sup> See p 73

<sup>38</sup> See Note 15 p 99

<sup>39</sup> See p 122

<sup>40</sup> This Includes \$10.9b equities and \$11.4b in managed investment schemes assumed to have a 60% equities exposure. See p 183 note 48.

<sup>41</sup> Estimate assuming 60% in equities cf an estimated 55% for ANZ and 64% for NAB.

<sup>42</sup> See Note 15 p 99

<sup>43</sup> Estimate - assumes 60% in equities cf 55% for ANZ and 64% for NAB.

<sup>44</sup> That is the size of an equities market drop which would cause a material asset value loss. ‘Material’ is evaluated as an amount equivalent to 10% of profit or 1.5% of bank equity (assuming a 15% ROE). This estimate ignores any credit risk impact, any loss of earnings on custody and wealth management and any associated reduction in actuarial discount rates for insurance or staff DB retirement schemes. It is important to note, in any immediate sense, such an asset loss would only partially be borne by bank shareholders because

Based on this table:

- the extent of potential debt exposure is material for all four banks, the actual credit risk exposure depends on security held, diversity of exposure and timing of impact, the ranking of prima facie debt exposure from highest to lowest is ANZ,CBA,WBC, NAB;
- CBA and Westpac have greater prima facie exposure to trustee and fiduciary risk than ANZ and NAB as a consequence of the scale of their wealth management operations;
- the extent of equities market-risk exposure for a conservatively assessed 5% equity market 'policy response to unburnable carbon' drop is material for ANZ and NAB but not for CBA & WBC <sup>45</sup>;

Of course conclusions derived from this table may be quite inaccurate. For example, implicitly it is assumed in the table in section 3 below that the insurance assets held in equities are passively managed.<sup>46</sup> Suppose, instead, a particular bank had a heavier exposure to the UK market, then its exposure to carbon risk would be significantly higher.

Section 4 below utilises the bank specific material in Table 2 above in combination with the background information in section 2 to assist rate the likelihood of adverse impacts resulting from unburnable carbon.

#### **4. Potential impact by source of exposure and current responses**

Table 3 below sets out the mechanisms by which the various sources of exposure might impact shareholders and an assessment of the likelihood of impact. Evidently, that likelihood is substantially dependent on judgements about timing.<sup>47</sup>

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much of the insurance business involves products where policyholders bear investment performance risk. For example, in regard ANZ only 10% of total life insurance business liabilities relate to life insurance contracts and life investment contracts with a capital guarantee or investment performance guarantee. Policyholders will bear the bulk of the 90% balance of the impact of an equity market drop - which might have significant reputational and regulatory consequences but won't cost bank shareholders immediately.

<sup>45</sup> The appropriate equities market impact to assume is, evidently, a difficult judgement. It depends on the assumed scale and suddenness of events which force a re-evaluation of the value of reserves which, if used would ensure the carbon budget is exceeded 3X. If 2/3<sup>rd</sup>s of all reserves and assets complementary to reserve use were written down instantaneously 11.4% of ASX value might be lost. The last row of the table simply assesses what level of write down would be material to each bank.

<sup>46</sup> The carbon reserve intensity of the ASX is similar to that of the MSCI world index so the distinction between passively managed local and foreign holdings is not significant.

<sup>47</sup> For example, a bank's board might reasonably gamble it can act more quickly than public policy makers ceasing to rollover exposed lending when it matures but before consensus on public policy forms.

Across the globe there is a slow increase in fossil fuel emission regulation. It is possible to imagine scenarios where the actual or anticipated actions of major government(s) result in debt default and substantial rapid equity write-downs. Equally, it is possible to imagine scenarios in which fossil fuel use is slowly reduced and fossil fuel businesses simply increase their payout ratios and scale back capital expenditure. In that scenario, there could be few significant debt defaults and loss of equity value could be gradual and dominated, year by year, by other share market 'signal and noise'. Regardless of scenarios, extensive loan default costing Australian bank profit dearly does not seem a likely scenario.<sup>48</sup> By contrast there would appear to be a substantial prospect of losses in the equity values of fossil fuel businesses.<sup>49</sup>

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<sup>48</sup> It is difficult for a shareholder to assess this risk because of the difficulty of knowing the extent of exposure of each of the banks to 'pure play' fossil fuel reserves. A lack of disclosure about financed emissions is only one issue here, the term structure of loans and the nature of the security held are also relevant ie whether it is specific to a particular project or entails a general charge over non-fossil fuel specific assets of a diversified business. It is important to realise over three quarters of the debt finance for the recent expansion in fossil fuel extraction and processing in Australia has been financed by foreign banks. Still, the Australian banks one quarter does involve pure play fossil fuel intensive businesses and projects. For example, in 2012 ANZ underwrote a \$1.2b finance facility for Whitehaven Coal in 2012. See <https://www.whitehavencoal.com.au/investors/documents/ASXReleaseWHCBankDebtFinancing.pdf> . But the weighted average contractual maturity of ANZ's corporate lending is only 2.5 years so it is entirely plausible to imagine a scenario of aggressive global public policy action addressing climate change commencing in some years with minimal loan default impact provided the ANZ board respond promptly.

<sup>49</sup> Internationally, about one third of the value of oil and gas companies is directly attributed to reserves. See <http://ran.org/bankrolling-climate-disruption> .

**Table 3: Mechanism and likelihood of impact by source of exposure**

<b>Source of exposure</b>	<b>Rating of likelihood of impact due to ‘unburnable carbon’ writedowns</b>	<b>Mechanism of impact, qualifications &amp; comment</b>
<b>1.On balance sheet debt finance</b>	Low	Risk of loss if a particular borrower defaults, security (eg plant or tenement values) proves inadequate and general loss provisions are exceeded.
<b>2.Direct Ownership</b>	High	Only relevant to CBA prior to 2013
<b>3.Custodial Holdings</b>	Negligible	Mostly relevant to NAB
<b>4. Wealth Management</b>	Low immediate \$ but potential for significant regulatory, reputational & legal impact	Regulatory: potential intervention if ‘unburnable carbon’ risk comes to be seen as systemic. <sup>50</sup> Reputational: potential loss of custom if public comes to believe bank is involved in ‘green-washing’. <sup>51</sup> Legal: risk of class action or similar suit if inadequate climate change risk response is found to constitute a breach of trustee or fiduciary duty <sup>52</sup>
<b>5. Staff super Plan assets – equity holdings</b>	High	Potential impact on plan surplus/deficit
<b>6. Insurance assets – equity holdings</b>	Low immediate to High	Potential impact on life (or other insurance business) attributable net assets unless hedging arrangements have ‘laid off’ risk of equity loss. <sup>53</sup>

Table 3 deals with prima facie risk exposure ‘pre- treatment’. The second column accounts for ‘standard’ risk mitigation strategies which have been adopted. Each of the banks’ 2013

<sup>50</sup> The UK sharemarket is a lot more exposed to unburnable carbon risk than the Australian market and the UK Pensions Minister has already warned UK pension funds of the risks associated with climate change. See <http://www.shareaction.org/minister-calls-pension-funds-recognise-growing-financial-risks-climate-change> .

<sup>51</sup> Evidently, regulatory and reputational risks extend beyond wealth management.

<sup>52</sup> The major Australian banks are particularly vulnerable to claims of this nature because monies invested in, say, the super fund operated by their wealth management arm will often be ‘on-invested’ in a fund managed by another associate arguably in breach of the no conflict and no profit rules applicable to fiduciaries.

<sup>53</sup> The potential impact on life insurance business is the hardest to assess because of the range of products on offer. Conceptually, a large fraction of each bank’s life insurance policy liabilities relate to ‘Life investment contract’ products in which the policyholder rather than the shareholder bears the investment performance risk. From the perspective of this table these products are more like wealth management products. However, in some cases ‘Life investment contract holders’ enjoy a performance or capital value guarantee provided by the bank shareholders. Life and general insurance products are more like the staff defined benefit super plan row, however, in some insurance products benefits are contractually linked to underlying asset performance.

annual report sets out a discussion of risk. None of the banks include any substantial discussion or quantification of climate change or unburnable carbon risk.<sup>54</sup> As a consequence table 4 is solely based on external assessments of current risk mitigation responses.<sup>55</sup>

**Table 4: External assessments of current risk mitigation responses**<sup>56</sup>

Source of exposure	ANZ	CBA	NAB	Westpac
<b>1. On balance sheet – assessed project finance risk level and response</b>	High risk  Intermediate response	High risk  No evidence of a response	Medium risk  Intermediate response	Medium risk  Intermediate response
<b>4. Wealth Management</b>	D <sup>57</sup>	D <sup>58</sup>	A	AA <sup>59</sup>
<b>5. Staff Super</b>	n/a <sup>60</sup>	n/a	A	Not provided
<b>6. Insurance</b> <sup>61</sup>				

Table 5 sets out, in the style of the consumer magazine ‘Choice’, an assessment of the pre- and post-treatment risks faced by each bank.<sup>62</sup> Note that, though the sources of risks are dealt with separately, it is more likely they would all materialise at once.

<sup>54</sup> Though, ANZ does mention climate change risk in its discussion of natural disasters (see p 191) and, at a more generic level, the risk categories discussed above are covered. See, for example, NAB’s discussion of defined benefit pension fund risk and equity market values on p 16. The CBA recognises the direct and indirect impact of its operations on the environment, has a target for GHG emission reductions but the target doesn't appear to include category 15 scope 3 financed emissions. Similarly, WBC reports on its emissions (see p 14) but, again, category 15 scope 3 financed emissions appear to be excluded. Since the 2013 Annual Report WBC has released a “Progress Report” with a description of their approach to risk mitigation. Note also, the ASX has recently amended its annual corporate governance recommendations to include disclosure by a listed entity of ‘any material exposure to economic, environmental and social sustainability risks and, if it does, how it manages those risks.’

<sup>55</sup> Direct ownership risk is omitted from Table 4 as it is no longer applicable. Similarly, custodial risk which is most relevant to NAB is omitted because the level of risk is assessed as negligible.

<sup>56</sup> The response evaluations in this table are sourced from EIRIS and the AODP. The EIRIS ratings are not publicly available. EIRIS scores each bank in regard its risk exposure level and response to project finance and sustainability issues based on 23 strategy, responsibility, assessment, compliance, monitoring, performance and reporting indicators. In regard the AODP scores see <http://aodproject.net/australia-climate-index> for wealth management and staff super. The scores range from AAA (best) to D (worst rating) to n/a where an invitation to respond was declined. They are based on five criteria - transparency, risk management, low carbon investment, active ownership and investment chain alignment.

<sup>57</sup> One Path Master Fund

<sup>58</sup> Colonial First State. CFS have set up an internal task group which is attempting to develop a risk assessment framework "to look at different companies and see how exposed they are to this issue" as reported by CE Daily on 15 April 2014.

<sup>59</sup> BT Super for Life

<sup>60</sup> n/a in this row means AODP has listed the fund but it has not been rated.

<sup>61</sup> No source of response assessment is available. The ratings in the wealth management row are used for Table 5.

**Table 5: Post treatment risk ratings<sup>63</sup>**

Source of exposure	ANZ	CBA	NAB	Westpac
<b>1. On balance sheet</b>	☹☹☹☹☹☹☹☹	☹☹☹☹☹	☹☹☹	☹☹☹
<b>4. Wealth Management</b>	☹	☹☹☹☹☹☹☹	0	☹
<b>5. &amp; 6. Equity market via staff super &amp; insurance</b>	☹☹	☹	☹☹☹	0
<b>Overall</b>	☹☹☹☹☹	☹☹☹☹☹	☹☹	☹

Overall the ranking of the banks from least to most exposed is:

- Westpac which has the equally lowest on balance sheet debt exposure with an ‘intermediate response’, second largest pre-treatment potential wealth management risk but the highest rated treatment strategy and, (by far) the smallest prima facie equities market exposure
- NAB has the equally lowest estimated on balance sheet debt exposure. Like Westpac it has an intermediate rating by EIRIS. However it has significant equities market exposure; closely followed by
- ANZ. It has, by far, the largest on balance sheet debt exposure, the second largest equities market exposure but a poor rating from the AODP which rated it equally with CBA;
- CBA has the second largest on balance sheet debt exposure but ‘no evidence of a response’ as evaluated by EIRIS and, by far, the largest wealth management exposure with equal worst-rated wealth management response.

<sup>62</sup> The extent of post treatment risk is assessed assuming the extent of treatment accords with the public EIRIS and AODP response ratings. Evidently, this might not be the case, for example the AA score obtained by Westpac’s ‘BT Super for Life’ product may be quite unrepresentative of, say Westpac’s insurance operations.

<sup>63</sup> The ratings in this table are based on Tables 2 and 3 which deal with pre-treatment risk exposures and Table 4 external assessments of risk mitigation strategies. The ‘overall’ score uses equal one third weights for credit risk, wealth management and equities market risk. To illustrate see the ‘2 ☹’s for ANZ for equities market risk. It is calculated as follows. To obtain a measure of ‘exposure’ the inferred or actual level of staff super plan plus insurance equities held taken from Table 2, ie \$18.2b = 40% of equity for ANZ. To obtain a measure of ‘treatment’ the possible treatment ratings range (na to AA) is converted to a score of 1 to 5, ANZ’s D converts to 1.7. A post-treatment risk index is then calculated as the exposure measure divided by the treatment score, ie 24%. It is assumed a score of 10 ☹’s would result from no response to the highest level of exposure ie an a score with a 106% exposure. The post-treatment ☹ score is then 24%/106% as a fraction of the worst possible score - 10 ☹’s, ie (rounded) 2 ☹’s.

## 5. Conclusion

The *Corporations Act* requires that boards provide shareholders annually with a report which describes the strategies and prospects for the business for future financial years.<sup>64</sup> Prospects do depend on risks and each of these top four Australian banks has some risk discussion. In addition each has a policy containing platitudinous references to the magnitude of the potential social impact of climate change. Oddly however, none contain any quantification of the potential impact of unburnable carbon on the prospects for the bank in future financial years. None report on the extent of their financed emissions. None have an externally disclosed target for reductions in financed emissions.

From the information publicly available it appears likely that at least three of these banks (ANZ, CBA and NAB) have a prima facie overall material exposure to unburnable carbon risk. It is possible WBC does not. Overall, ANZ and the CBA are the most exposed. Indeed, assessing them by their actions rather than by their rhetoric, it would be difficult to avoid the conclusion that ANZ and CBA are run by boards who either comprise a majority of climate change deniers and/or who are gambling that there will be no public policy action forthcoming which will impact their fossil fuel exposure .

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<sup>64</sup> APS 330 Capital Adequacy: Public disclosure of Prudential Information imposes further obligations on banks to disclose their risk management framework in particular including industry credit risk exposure. For example, see NAB's APS 330 disclosure at <http://www.nab.com.au/content/dam/nab/about-us/shareholder-centre/regulatory-disclosures/documents/september-2013-pillar-3-report-final.pdf> . The industry breakdown provided in these documents is inadequate to identify the extent of credit risk exposure to carbon intensive businesses.

## Appendix A: Accounting for financed emissions

The most widely used framework for emissions calculation is the Greenhouse Gas (GHG) Protocol. It has been developed through an ongoing collaboration between the World Resources Institute and the World Business Council for Sustainable Development. These organisations have acted in partnership with the United Nations Environment Program Finance Initiative. The GHG protocol divides a company's emissions into three categories:

- Scope 1 includes all direct emissions from sources owned or controlled by the company;
- Scope 2 includes indirect emissions from purchased energy;
- Scope 3 includes emissions up and down the value chain. For example, a thermal coal miner's scope 3 calculation includes (up chain) emissions resulting from the combustion of the coal they produce. Category 15 of scope 3 deals with emissions resulting from investment, it apportions emissions from a company to a bank based on the proportion of the company's combined debt and equity financed by the bank through loans or portfolio investment.

Standardised methodology for quantification and reporting of GHG emissions (including scope 3 emissions) was published in 2004. Detailed methodology for estimation of financed emissions was developed in the mid 2000's. A survey in 2009 of the existing methodologies in use at that time described eight methodologies which had been applied to financial institutions in 2007 and 2008.<sup>65</sup> For example one study assessed the financed emissions of six Dutch banks in 2007.<sup>66</sup> In 2008 Rabobank calculated the carbon footprint of its loan book. In 2011 the GHG protocol released the Corporate Value Chain Accounting and Reporting Standard which includes detailed GHG accounting guidance for financed emissions.<sup>67</sup> It includes mandatory and optional categories for reporting. Further guidance on calculating scope 3 'financed emissions' in a standardised format is in the process of preparation. It is scheduled for release as a draft for comment between September 2014 and February 2015.<sup>68</sup>

Each of the Australian banks has reported their scope 1 and scope 2 emissions to the Carbon Disclosure Project (CDP). Indeed Westpac, CBA and NAB have appeared as leaders in the

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<sup>65</sup> The application of some of these methodologies had a 'pilot' dimension.

<sup>66</sup> See p 6 of BECO group *Carbon footprinting of financed emissions, existing methodologies a review and recommendations*, 2009.

<sup>67</sup> See

<http://www.ghgprotocol.org/files/ghgp/Corporate%20Value%20Chain%20%28Scope%203%29%20Accounting%20and%20Reporting%20Standard.pdf> .

<sup>68</sup> See

<http://www.ghgprotocol.org/files/ghgp/Concept%20Note%20GHG%20Protocol%20Financial%20Sector%20Guidance%20final.pdf> . Clearly, it would be most desirable if an international, harmonised, robust methodology for estimation of financed emissions was in use by all the banks and, to our knowledge, two of the Australian banks (NAB and WBC) are assisting in that process. But it is not a corollary of that observation that is appropriate for a bank to make no quantified disclosure until the methodology is 100% perfected.

CDP's Climate Disclosure Leadership Index.<sup>69</sup> However, typically, scope 3 emissions from banks dwarf their operational scope 1 and scope 2 emissions.<sup>70</sup> At present, worldwide only 6% of 125 financial businesses in the global Top 500 companies have reported their scope 3 emissions.<sup>71</sup> The top four Australian banks have not reported their scope 3 category 15 emissions.<sup>72</sup>

In the 2014 US resolution season shareholders sought disclosure of financed emissions at Bank of America and PNC Financial.<sup>73</sup>

Scope 3 emissions are those most relevant to an assessment by shareholders and analysts of the 'unburnable carbon' risk faced by financial institutions.

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<sup>69</sup> See <http://www.thesustainabilityreport.com.au/nab-westpac-leaders-in-2013-cdp-global-500/4265/> .

<sup>70</sup> For example a study of Canadian banks involved in fossil fuel finance found scope 3 emissions were typically 100 times larger than operational emissions, see <http://ran.org/bankrolling-climate-disruption> ,p 7.

<sup>71</sup> See p 26 of <https://www.cdp.net/cdpresults/cdp-global-500-climate-change-report-2013.pdf> .

<sup>72</sup> Though, CBA "has begun to determine thresholds for reporting of emissions associated with projects." In 2013 "only one refinancing project met this criteria." See p 11 at <https://www.cdp.net/CDPResults/CDP-Australia-NZ-Climate-Change-Report-2013.pdf> .

<sup>73</sup> The resolutions each attracted a supporting vote of about one-quarter. These two banks scored poorly in a study of exposure to mountaintop removal coal mining and coal export operators in the US, see <http://ran.org/extreme-investments-extreme-consequences> .

## Appendix B: Estimates and methodology: on balance sheet exposure to carbon intensive businesses

This appendix provides details of the calculations used to obtain the estimates in table 2 of on balance sheet loan exposure to coal miners, oil and gas extractors, coal and gas fired power generators and coal export ports.

There are two data sources for each bank - but each has its own focus Market Forces (MF)<sup>74</sup> assembled flow data from the trade press to estimate project finance during the period 2008 to 2013 in Australia. Their focus was to link lenders to projects not estimate shareholder exposure. This source is an underestimate of balance sheet stocks because it excludes international exposure, other (ie non project finance) and loans extended prior to 2008 but an overestimate because it excludes repayments.

Each bank produces “Exposure at default” (EAD) industry classification data itself but the granularity of industry coverage varies, also EAD includes undrawn commitments. The figures used in table 2 of this paper are based on the EAD figures below except that the Market Forces estimate of finance for coal ports is used.<sup>75</sup>

Note that because of the differences in granularity of the bank’s own disclosures there are differing introduced levels of inaccuracy.<sup>76</sup> The ranking in order from most to least accurate is ANZ, WBC and NAB then CBA.

### 1. ANZ

**Market Forces:** \$6.5b. Coal ports accounts for 26% of this figure ie \$1.7b.

**ANZ:** Exposure at default (EAD)<sup>77</sup> total = \$798b

Estimate<sup>78</sup> = 1.98% = \$15.8b excluding coal ports.

= 2.2% = \$17.5b<sup>79</sup> including MF estimate for coal ports.<sup>80</sup>

52% of corporate lending is in Australia.

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<sup>74</sup> Identified loan finance extended during 2008 to 2013 to fossil fuel businesses/projects (coal, coal fired power generation, coal port facilities, gas fired power & LNG plants) in Australia. See <http://www.marketforces.org.au/banks/map/>.

<sup>75</sup> The reason is that in the bank EAD figures coal ports are included in a much larger ‘Transport’ aggregate. See below.

<sup>76</sup> This inaccuracy stems from the ‘best endeavours’ nature of the calculation, for example, the necessity to use Australian average figures where a bank’s own disaggregation is unavailable.

<sup>77</sup> See ANZ Basel III Pillar 3 disclosure September 2013, p 34

<sup>78</sup> of exposure to coal, oil and gas in the resources and power generation industries, excludes coal ports.

<sup>79</sup> Using \$1.7b project finance flow identified by Market Forces, assumes there is no international exposure to coal port finance.

<sup>80</sup> Coal ports are included in ANZSIC code 6622 in Transport and Storage rather than mining or electricity, gas & water.

Electricity, gas and water = 1.6%<sup>81</sup> of which 61% is in oil, gas and coal; Mining = 1.9% of which 53% is in oil, gas and coal<sup>82</sup>. Note, the 1.98% used above is calculated as 1.6% \* 61% + 1.9% \* 53% = 1.98%.

## 2. CBA

**Market Forces:** \$5.0b Coal Ports accounts for 26% of MF estimate = \$1.3b.

**CBA:** Exposure at default (EAD)<sup>83</sup> total = \$796b

Estimate = 0.9% = \$7b excluding coal ports.

= 1.0% = \$8.3b including coal ports.

71% of corporate lending is in Australia<sup>84</sup>

Energy = 0.9%<sup>85</sup> of which an assumed 33% is in oil, gas and coal based on the decomposition of Australian average major energy project investment.<sup>86</sup>

Mining = 1.4%<sup>87</sup> of which an assumed 42% is attributable to coal, oil and gas based on Australian average figures for the net present value of demonstrated resources by commodity.<sup>88</sup>

Then, 0.9% \* 33% + 1.4% \* 42% = 0.9% used above excluding coal ports.

## 3. NAB

**Market Forces:** \$4.4b. Coal ports accounts for 28% of MF estimate = \$1.2b.

**NAB:** Exposure at default (EAD)<sup>89</sup> total = \$814b.

Estimate = 0.6% = \$4.9b excluding coal ports

= 0.7% = \$6.1b including coal ports

68% of corporate EAD is in Australia.<sup>90</sup>

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<sup>81</sup> ANZ's lending portfolios for the energy sector is split 27% gas-fired and 34% coal fired. See [http://www.anz.com/resources/9/1/91f06033-a0fb-4155-bd4b-973bbd642b99/coal\\_industry.pdf?MOD=AJPERES](http://www.anz.com/resources/9/1/91f06033-a0fb-4155-bd4b-973bbd642b99/coal_industry.pdf?MOD=AJPERES)

<sup>82</sup> As at September 2013, personal communication, ANZ, 52% of ANZ's resource exposure is in Australia.

<sup>83</sup> See ANZ Basel III Pillar 3 disclosure September 2013, p 34

<sup>84</sup> See CBA Basel III Pillar 3 as at June 2013, p 20.

<sup>85</sup> See CBA Basel III Pillar 3 as at June 2013, p 21.

<sup>86</sup> See Table 1 column 'value of publicly announced projects' as at October 2013, BREE at <http://www.bree.gov.au/publications/major-electricity-generation-projects>.

<sup>87</sup> See CBA Basel III Pillar 3 as at June 2013, p 21.

<sup>88</sup> See ABS 5204 12/13 Table 62 Value of Demonstrated Mineral and Energy Resources, by Commodity - as at 30 June at <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5204.02012-13?OpenDocument>.

<sup>89</sup> See NAB Pillar 3 Report September 2013, p 22.

<sup>90</sup> See p 20.

Mining exposure at March 2014 was 23% of 'Agriculture, forestry, fishing and mining'<sup>91</sup> which was 5.7% of EAD, so Mining was 1.3% of EAD of which 29% is identified as Oil and Gas, coal is not separately identified, NAB's coal exposure is smaller than the Australian average<sup>92</sup>, so assume 35% of EAD is attributable to coal, oil and gas, cf 42% assumed Australian average. EAD to coal mining, oil and gas extraction is then 0.46%.

15.8% of NAB's project finance portfolio was accounted for by gas and coal fired power generation.<sup>93</sup> The entire project finance portfolio as at September 2013 was 1.65% of loans, advances and acceptances<sup>94</sup>(54% of EAD<sup>95</sup>) so EAD to gas and coal fired power generation can be estimated as 0.14% of EAD.

Then,  $1.3\% * 35\% + 15.8\% * 1.65\% * 54\% = 0.6\%$ .

#### 4. WBC

**Market Forces:** \$3.0b 32% is in coal ports = \$1.0b.

**WBC:** Exposure at default (EAD)<sup>96</sup> total = \$780b

Estimate = 0.7% = \$5.3b excluding coal ports.

= 1.0% = \$6.3b incl. Australian coal ports

Electricity, gas and water & communications = 1.9%<sup>97</sup>. Total direct and indirect exposure to coal and gas fired power generation is 45% of \$3.1b<sup>98</sup> ie 0.18% of EAD.

Mining = 1.2%<sup>99</sup> of which an assumed 42% is attributable to coal, oil and gas based on Australian average figures for the net present value of demonstrated resources by commodity<sup>100</sup>, ie 0.5% of EAD.

Then,  $45\% * (\$3.1b / \$780b) + 42\% * 1.2\% = 0.7\%$ .

72% of WBC's corporate lending is in Australia.<sup>101</sup>

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<sup>91</sup> See p 88 of <http://www.nab.com.au/content/dam/nab/about-us/shareholder-centre/financial-results/documents/2014-half-year-results-investor-presentation.pdf> .

<sup>92</sup> Personal communication, July 2014.

<sup>93</sup> See p 12 of <http://www.nab.com.au/content/dam/nab/about-us/shareholder-centre/annual-reports/pdf-reports/customer-dig-deeper.pdf> .

<sup>94</sup> Ibid p 12.

<sup>95</sup> See Annual Report p 69 for Sept 13 loans, advances and acceptances.

<sup>96</sup> See WBC Pillar 3 Report March 2014, p 29.

<sup>97</sup> Ibid

<sup>98</sup> See <http://www.westpac.com.au/about-westpac/sustainability-and-community/reporting-our-performance/stakeholder-impact-reports/> . See Customer Factpac .

<sup>99</sup> See WBC Pillar 3 Report March 2014, p 29

<sup>100</sup> See ABS 5204 12/13 Table 62 op cit.

<sup>101</sup> See p 31.