Responding to Economic Climate Risk in Australia

Four Twenty Seven, June 2018

The global tide of interest in the Task Force on Climate-related Financial Disclosures (TCFD) has hit the shores of Australian financial markets, steered by regulators concerned about the systemic risk climate change poses to the economy.

In 2017 Australian Prudential Regulation Authority's Geoff Summerhayes was the first Australian regulator to formally endorse the TCFD. "Some climate risks are distinctly 'financial' in nature. Many of these risks are foreseeable, material and actionable now," he said.[1] This sentiment was echoed by John Price of the Australian Securities and Investments Commission in 2018[2] and reflects growing regulatory concern over climate risk disclosure internationally, as shown by Article 173 of France's Law on Energy Transition and Green Growth and the 2018 European Commission Action Plan, which lays the groundwork for mandatory risk disclosure in Europe.

Recurring extreme weather events conspire to raise awareness on the issue of climate change. Australia's "Angry Summer" of extreme heat, drought and rainfall cost the economy about $8 billion[3] in 2013, followed by another summer of damaged infrastructure, decreased worker productivity and threatened energy supplies in 2016-17.[4]

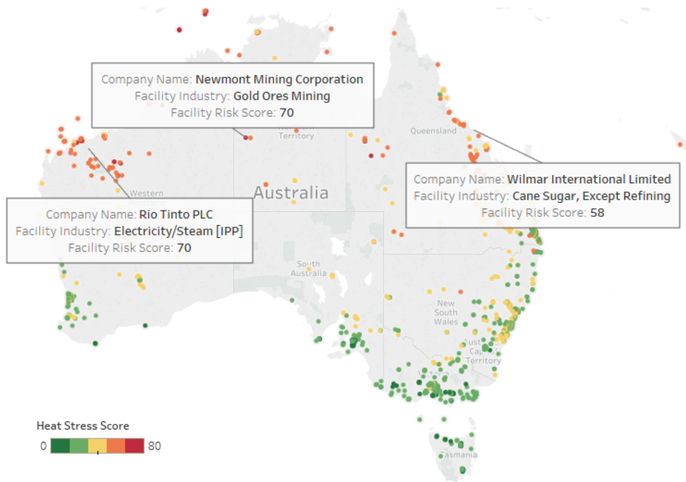
Corporations and investors now face the challenge of accurately assessing and reporting their exposure to physical climate risks. In exercising their own due diligence and assessing the exposure to physical climate risks in their portfolios, investors arm themselves with valuable information on corporate risk exposure which they can leverage along with their position as partial owners to engage with companies around building resilience to pertinent climate hazards.

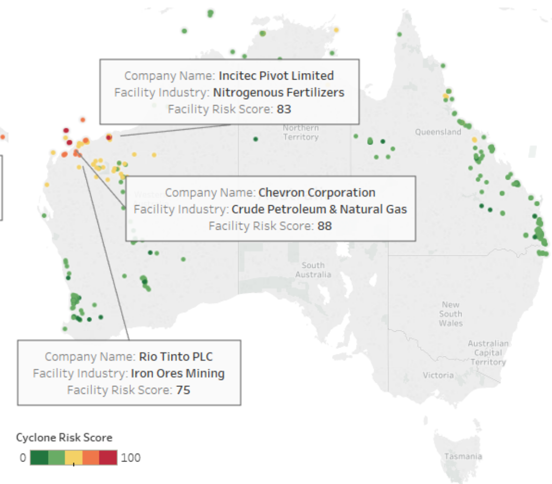
AUSTRALIA'S DOMINANT INDUSTRIES AT RISK

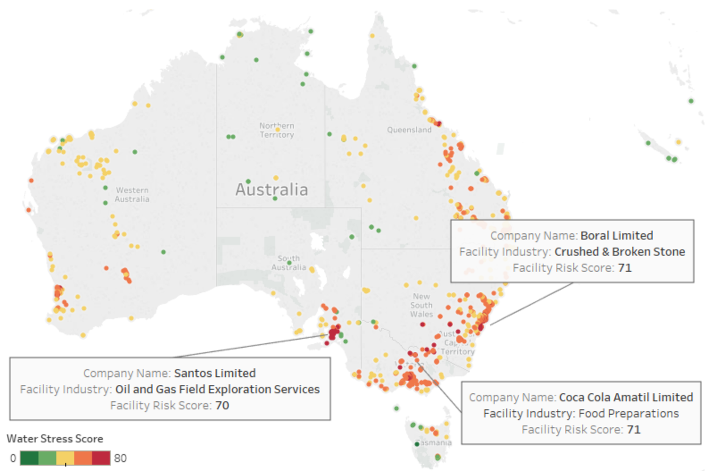
Construction, mining and manufacturing together constitute almost 20 percent of Australia's economy[6] and are highly vulnerable to heat stress and water stress, which threaten large swaths of the country (Figs. 1, 2). Water shortages cause risks to operations, threaten energy supplies and drive reputational risks. Likewise, extreme heat places excess demand on the power grid and threatens worker health and productivity, while amplifying the risk of bushfires and exacerbating drought.[7]

Extreme wind storms are also a concern in the Northwest, where mining and construction companies relying on workers who live in urban locations and commute long distances to remote sites for consecutive work days face particular risks. Workers may be hindered by extreme conditions at home, at work, or during the commute (Fig.3).

[1] Summerhayes, Geoff. "Australia's new horizon: Climate change challenges and prudential risk." 17 February 2017. APRA: https://www.apra.gov.au/media-centre/speeches/australias-new-horizon-climate-change-challenges-and-prudential-risk
[2] Han, Misa. "ASIC recommends voluntary disclosure of climate risks." 20 June 2018. Financial Review: https://www.afr.com/business/asic-recommends-voluntary-disclosure-of-climate-risks-20180618-h11j2d
[3] Angry Summer 2016/17: Climate Change Super-Charging Extreme Weather. Climate Council: https://www.climatecouncil.org.au/uploads/06d005450f38335df2c2165dc9acaac9.pdf
[4] Angry Summer
[5] The seminal report released by the European Bank for Reconstruction and Development in May 2018, Advancing TCFD guidance on physical climate risks and opportunities provides detailed recommendations for assessment and disclosure metrics aligned with the TCFD.: http://427mt.com/wp-content/uploads/2018/05/EBRD-GCECA_final_report.pdf
[6] Austrade: https://www.austrade.gov.au/International/Invest/Why-Australia/robust-economy
[7] Mason, Leah and Giurco, Damien. Climate change adaptation for Australian minerals industry professionals. 2013 National Climate Change Adaptation Research Facility: https://www.nccarf.edu.au/sites/default/files/attached_files_publications/Mason_2013_Climate_change_adaptation_minerals_industry_professionals.pdf







Maps show all corporate facilities in the Four Twenty Seven database that are in Australia. Dots represent facilities and the color of each dot represents the facility's exposure to a specific climate hazard. Source: Four Twenty Seven.

Figure 1 (top left). Colors represent exposure to heat stress.

Figure 2 (bottom left). Colors represent exposure to water stress.

Figure 3 (top right). Colors represent exposure to cyclones. Only facilities with scores greater than zero are shown.

FROM CLIMATE IMPACTS TO FINANCIAL RISKS

An analysis of a sample of Australia's largest corporations further demonstrates the heightened exposure of companies in resources-intensive material sectors.

In the mining sector, for example, Boral Limited and Rio Tinto are exposed water stress and heat stress in their operations. Both companies operate facilities in regions prone to drought and extreme heat, in Australia as well as in the Western United States, with Boral facilities exhibiting a particularly high level of risk (Fig. 4)

Exposure to climate risk may also come from the value chain at large. While Boral's sales are concentrated in developed markets, Rio Tinto also caters to Southeast Asian countries, and may be exposed to shifts in demand as these countries weather their share of typhoons and floods, with broad reaching macro-economic impacts.

In contrast, Boral's revenue sources are less concentrated in terms of sectors. The company derives revenue from sales of wood, petroleum, and mineral manufacturing as well as mining, and these markets are sensitive to weather volatility, whereas Rio Tinto's dominant revenue streams are less sensitive to demand shifts during volatile weather periods.

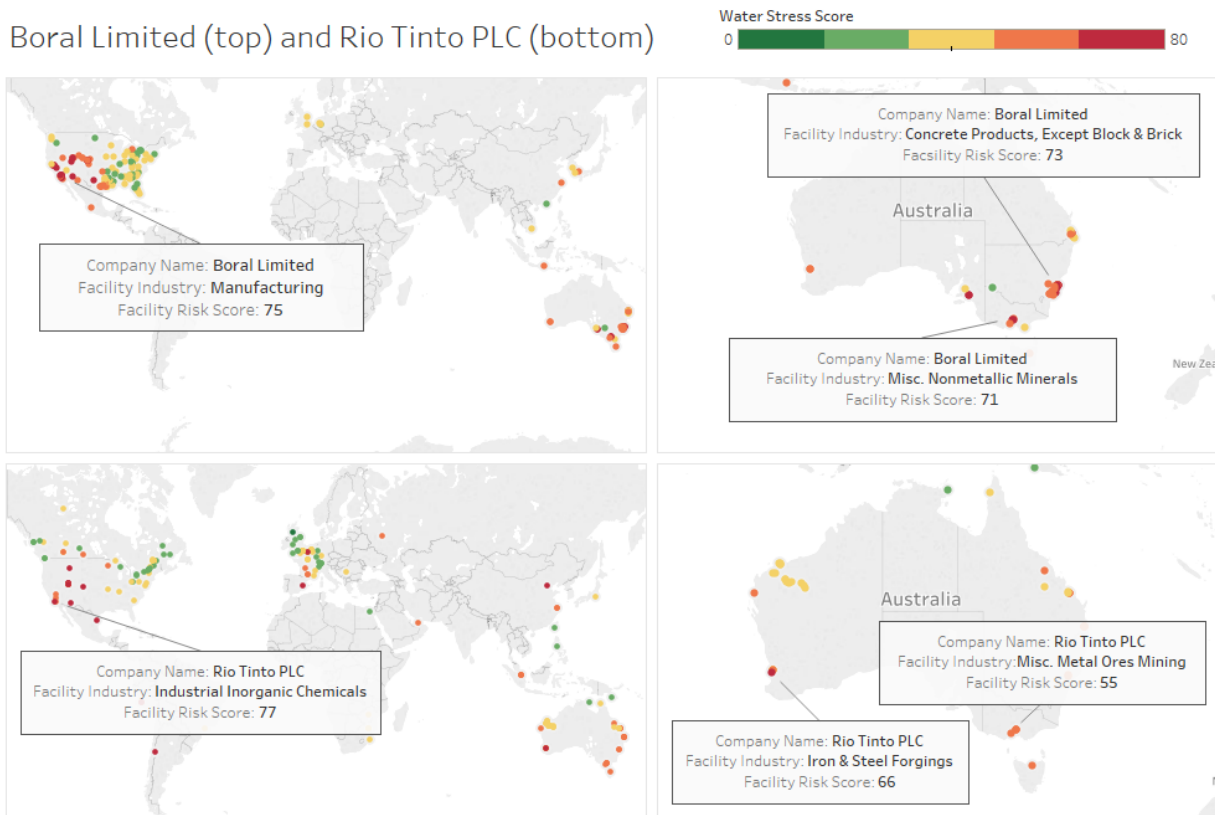


Figure 4. Facilities of Boral Limited and Rio Tinto PLC represented by dots, colored according to their exposure to water stress, with dark green expressing the least exposed sites and red representing the most exposed site. Source: Four Twenty Seven.

Resource-intensive industries like materials are highly exposed, but industries like energy and beverages also face risks driven by shifting resource availability.[8] Likewise, companies in industries that rely on complex global supply chains like auto manufacturing[9] and pharmaceuticals,[10] can be impacted by extreme weather events anywhere along their supply chain in addition to the physical location of their facilities. (Fig. 5)

Climate risk in financial institutions is harder to assess as their greatest exposure lies in credit or investment portfolios. Large banks or infrastructure investment firms like Macquarie and the Commonwealth Bank of Australia finance the companies whose vulnerability was just discussed. Banks may also be exposed to floods, wildfires, and sea level rise by way of their mortgage portfolios. Finally, while the exposure of insurance companies to the increasing magnitude of storms and frequency of floods is a well-known risk, new pathways of risk for climate impacts are starting to emerge. A major Australian insurance company has pinpointed a correlation between heatwaves in Western Sydney and an increase in alcohol consumption, which led to more house break-ins and ultimately resulted in a higher number of homeowner insurance claims.[11]

[8]"From Risk to Resilience – Engaging with Corporates to Build Adaptive Capacity." June 2018. Case study on beverage companies, p 4-5. Four Twenty Seven: http://427mt.com/2018/06/05/engaging-corporates-build-adaptive-capacity/
[9]"Can Investors Anticipate the Impacts of Climate Change on Equities?" 9 April 2018. Four Twenty Seven: http://427mt.com/2018/04/09/can-investors-anticipate-the-impacts-of-climate-change-on-equities/
[10]"Winter Storm Riley Threatens Pharmaceuticals and Airlines." 2 March 2018. Four Twenty Seven: http://427mt.com/2018/03/02/winter-storm-riley-threatens-pharmaceuticals-airlines/
[11]SIF-IAIS Issues Paper on Climate Change Risks to the Insurance Sector, March 2018. Draft for consultation: https://www.iaisweb.org/page/consultations/closed-consultations/2018/draft-issues-paper-on-climate-change-risks-to-the-insurance-sector

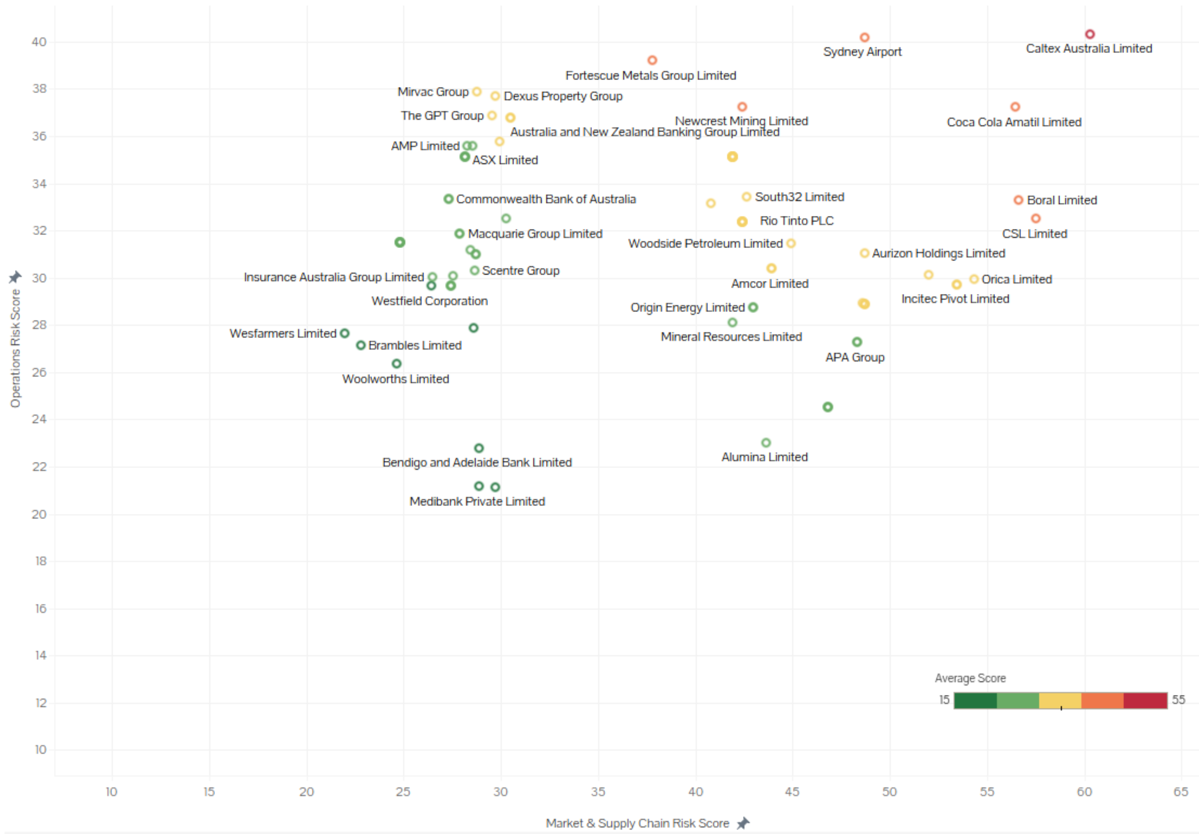


Figure 5. Companies across industries plotted by their Operations Risk (y-axis) and Market and Supply Chain Risk (x-axis). Colors represent the companies' overall average score with green showing the least exposed companies and red showing the most exposed. Only companies headquartered in Australia are shown. Source: Four Twenty Seven

FROM RISK TO RESILIENCE

Investors and corporations must take steps to mitigate the risks from a changing climate. Companies can prioritize their adaptation actions and maintain robust operations by leveraging climate models and geospatial data to quantify facilities' projected exposure to climate hazards. Rio Tinto, for example, has taken steps to address the challenges its facilities face, some confronting drought while others endured interrupted operations due to flooding. The company amended the design of a new refinery to allow for the use of seawater for cooling in an acknowledgement of future water challenges, informed by the water shortages it confronted at another facility.[12]

Investors can leverage their position as shareholders and their own knowledge of climate risks in a powerful way to push corporations to increase their risk disclosure and build resilience.[13] While Australian shareholders face more limitations to the resolutions they can introduce compared to those in other nations like the United States, they also tend to have more direct interactions with corporate boards and directors, which they can leverage into meaningful face-to-face engagement. Engagement on climate is relatively new for Australian shareholders, but is gaining momentum, with institutional asset managers voting on several climate risk disclosure resolutions in 2018.[14] Local Government Super, for example, lodged a shareholder resolution on general insur-

[12]Rio Tinto and Water. 2013. Rio Tinto: http://www.export.gov.il/uploadfiles/04_2013/riotinto_and_water.pdf
[13]"From Risk to Resilience – Engaging with Corporates to Build Adaptive Capacity." June 2018. Four Twenty Seven: http://427mt.com/2018/06/05/engaging-corporates-build-adaptive-capacity/
[14]Williams, Ruth. "Big investors backed shareholder campaigns on climate, human rights." 23 February 2018. The Syndey Morning Herald: https://www.smh.com.au/business/markets/big-investors-take-a-public-stand-on-climate-change-risk-20180215-p4z0gr.html

ance company QBE after QBE reported "unexpected" losses of $1.2bn from natural catastrophe exposure – QBE had failed to mention climate change as a risk to its shareholders in previous disclosures.[15]

Shareholder resolution can be combined with direct engagement on physical climate risk to prompt both improved climate risk disclosure and adaptation efforts. Such engagement likely influenced companies such as Santos, which published its first Climate Change Report in 2018.[16] The Asian Investor Group on Climate Change notes that investors can take action by integrating risk assessments into their assets and engaging with companies and policy makers, but also by reviewing asset allocations, disclosing their own risks, and investing in new opportunities.[17]

"This work is not without potential reward with a rapidly growing number of high quality investment opportunities being developed to fill the investment and financing gap. Investors who best understand the issues will be best positioned to deploy the capital required. This shared responsibility requires transparency from all stakeholders," emphasized Australian First State Investments, regarding its climate risk disclosure.[19]

Figure 6. This Tweet refers to shareholder resolution calling for QBE to disclose climate risks. Source: Market Forces[18]

CONCLUSION

Clear, consistent reporting of physical climate risks and opportunities is an essential driver of building transparency and resilience in individual corporations and in the financial system. Physical climate risk assessment and disclosure is still in the early stages of adoption and implementing disclosure practices now gives corporations and investors the opportunity to be on the leading edge in a rapidly developing space. Investors in Australia have begun to show increased action around climate issues, which is likely to work alongside ongoing global developments to propel risk disclosure into the mainstream. While risk awareness and disclosure are only the first step, understanding climate risks and sector sensitivities provides investors with valuable information from which to create robust engagement strategies and fuel change in corporations and economies.

[15]Williams, Ruth. "Shareholders target QBE over climate change 'failure'" 1 March 2018. The Sydney Morning Herald: https://www.smh.com.au/business/companies/shareholders-target-qbe-over-climate-change-failure-20180301-p4z2e0.html
[16]"Rio Tinto's climate change resolution marks a significant shift in investor culture." 2 May 2018. The Conversation: https://theconversation.com/rio-tintos-climate-change-resolution-marks-a-significant-shift-in-investor-culture-95927
[17]"Integrating climate change into investment strategy: a guide for investors." 2017. Asia Investor Group on Climate Change: http://aigcc.net/wp-content/uploads/2017/12/AIGCC-CC-Guide-Design-Final.pdf
[18]QBE faces massive shareholder pressure at AGM. 3 May 2018. Market Forces: https://www.marketforces.org.au/qbe-faces-massive-shareholder-pressure-at-agm/
[19]Climate Change. First State Investments: http://rireportfirststateinvestments.com/our-approach/featured-content/climate-change/?n=1

Four Twenty Seven

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ABOUT FOUR TWENTY SEVEN

Four Twenty Seven (427mt.com) is the leading provider of market intelligence on the impacts of climate change for financial markets. We tackle physical risk head on by identifying the locations of corporate production and retail sites around the world and their vulnerability to climate change hazards such as sea level rise, droughts, floods and tropical storms, which pose an immediate threat to investment portfolios.

Four Twenty Seven's ever-growing database now includes close to one million corporate sites and covers over 2000 publicly-traded companies. We offer subscription products and advisory services to access this unique dataset. Options include data licenses, an interactive analytics platform, and company scorecards, as well as reporting services, scenario analysis, and real asset portfolio risk assessments.

Four Twenty Seven has won multiple awards for its innovative work on climate risk and resilience and our work has been featured by Bloomberg, the Financial Times and the UNFCCC. Four Twenty Seven was founded in 2012 and is headquartered in Berkeley, California with offices in Washington, DC and Paris, France.

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