

Investor Expectations of Mining Companies

Digging deeper into carbon asset risk



Introduction

As institutional investors, we recognise that the challenge of climate change will have an impact on our holdings, portfolios and asset values in the short, medium and long term. To achieve long term returns on investment for our clients we must both ensure that each of our investments is prepared for the challenges of climate change and ensure that robust policy action is taken to address climate change. Consistent with the position of the G7, investors support science-based targets to limit the impact of climate change to 2°C or below. The mining sector can play a key role in achieving both of these objectives, given its overall contribution to typical investor portfolio value, the energy and carbon-intensive nature of its operations and the opportunity to provide more efficiently those commodities that are essential to building a low carbon economy.

A number of mining companies have already taken steps to mitigate the potential impact of the move to a low carbon economy and lower commodity prices. For example, a number of diversified miners have reduced their exposure to thermal coal¹. Others are exploring the potential for new technologies such as carbon capture and storage or to achieve a zero carbon mining operation. Others have conducted in-depth scenario planning analysis to test portfolio resilience. However, we remain concerned that the current business strategies of many mining companies may not be sufficiently sustainable given the potential for rapidly changing demand for different commodities triggered by emerging technologies and policy interventions which can and will impact on the sector.

The mining sector is known for the cyclical nature of its performance, experiencing periods of over-investment and under-investment. This is as a result of the challenge of predicting demand, coupled with the long lead-times to deliver large-scale projects. We are therefore acutely aware that strategic and capital allocation decisions being made now will determine the future sustainability and profitability of the sector and that this must be done in the context of climate change and the associated energy transition. We look to the Boards of major mining companies to make these decisions in the long term interests of investors.

Purpose

The purpose of this document is to provide a guide to investors to have constructive engagement with the Boards of mining companies to consider and direct more sustainable strategies with the aim of mitigating the long term risks to us as investors. It is to be used as required by investors in their engagement with companies and in conjunction with the previously released *Institutional Investors' Expectations of Corporate Climate Risk Management*². Whilst this document is primarily aimed at diversified mining companies, the issues raised can equally be applied to any single commodity and therefore are also applicable, if appropriately adapted, to companies focused on particular commodity groups such as thermal coal, precious metals, copper or rare earth metals.

¹ Throughout this document thermal coal refers to coal used in either power generation or for heat purposes only. It is to be distinguished from metallurgical coal, which is used primarily as a reducing agent in steel making and other industrial processes.

² IIGCC, IGCC and INCR (2012) *Institutional Investors' Expectations of Corporate Climate Risk Management*. Accessible at: <http://www.iigcc.org/publications/publication/institutional-investors-expectations-of-corporate-climate-risk-management>

Changing dynamics for the Mining sector

There is evidence that a transition is occurring towards a lower-carbon, more resource-efficient economy. This is driven, at least in part, by policies that have been introduced to reduce greenhouse gas emissions, together with the impact of rapidly developing technologies which improve energy and resource efficiency as well as offering alternative sources of energy supply. Other important drivers are also changing demand for commodities, such as the desire to improve air quality and economic resilience to commodity price rises.

Under the IEA new policies, current policies and 450 scenarios we see both incremental and disruptive changes in policy, technology and demand dynamics presenting material risks and opportunities to the sector. We would like to see resilient business strategies that have been sufficiently stress tested against developments outlined below.

Demand & price dynamics – the assumptions that underpin many of the demand and price projections used in the mining industry are open to challenge.

- **Global demand** – key drivers include the level of GDP growth and its underlying drivers, including the correlation to historic levels of materials consumption, government policies on energy generation, energy and wider resource independence and associated policies such as those addressing air pollution³. There is also the potential for complex interactions between commodity groups. For example, policies to reduce carbon emissions may reduce demand for thermal coal and lower grade iron-ore, but may increase demand for gas (in substitute for thermal coal), uranium (to fuel nuclear power) and copper (to support electrification of transport and increased power transmission capability.)
- **Commodity price scenarios** – in lower demand scenarios, new projects that are at the higher end of the cost curve could be either less profitable or unprofitable. Meanwhile, spikes in commodity prices can spark innovation which can ultimately lead to lower prices caused by either increased resource efficiency or structural changes in demand.
- **Stigmatisation** – Some investor preferences are shifting, driven by beneficiary and public pressure to divest from thermal coal assets. In 2015 there have been a number of announcements by public and private pension funds to disinvest from companies that earn more than a threshold of revenues from thermal coal assets. For smaller and less liquid stocks, this could have an impact on price⁴.

Technology dynamics – whilst innovation in the mining sector itself has been relatively slow and based on incremental improvements, technologies in adjacent industries including product manufacturing or energy supply can more rapidly change demand for different commodity groups. As noted above, this can both increase and reduce demand for different commodity groups. We are interested to understand mining companies' outlook on the technology improvements, innovation and cost profile across the following:

- **Renewable energy** – projections for renewable investment, newly installed capacity and grid parity pricing which together suggest a growing share of the energy mix. Developments in energy storage solutions are anticipated to further reduce costs, for example for small-scale solar installations, and reduce problems with intermittent generation of power supply. Renewables not only offer an alternative source of grid-supplied electricity, but could also provide cost-effective solutions for powering mining operations in remote locations.
- **Access to low-cost sources of oil & gas** – innovation in hydraulic fracturing of shale oil and gas has transformed the competitiveness of gas in North America and more widely and has had a significant impact on the oil price. This has, in turn, reduced demand for thermal coal.

³ See for example, Carbon Tracker Initiative (2015) *Lost in Transition: How the energy sector is missing potential demand destruction*.

⁴ Oxford Smith School Stranded Assets Programme (2013) *Stranded assets and the fossil fuel divestment campaign: what does investment mean for the valuation of fossil fuel assets*.

- **Electrification of transport and heat** – low-carbon sources of electricity combined with the greater efficiency potential of electric motors and heat pumps opens up the potential for a rapid electrification of both transport and lower-grade residential and commercial heat sources. This could spur demand for key commodity groups associated with building grid infrastructure and electrical devices (e.g. copper), electricity storage including batteries (e.g. rare earth metals such as Lithium), while reducing demand for traditional fossil fuels. In less developed countries, technology innovation could enable infrastructure to leap-frog that of more mature economies.
- **Urban design** – The New Climate Economy report highlights the options for future urban design which radically reduces reliance on fossil fuels and increases resource efficiency.
- **Carbon Capture & Storage** – large scale deployment of CCS technology is beginning to be deployed at scale⁵, but breakthroughs over the coming decade could significantly affect the long term potential for thermal coal and gas to play a role in providing energy for power generation and industrial heat. Equally, CCS may prove difficult to deploy at scale or too costly compared with other low-carbon solutions and therefore may not provide a means for continued fossil-fuel use over the long term.

Policy dynamics – the IEA (*Redrawing the Climate-Energy map*) highlighted that 78% of CO₂ emissions globally were already covered by some form of climate mitigation policy such as carbon pricing, energy savings measures and fuel efficiency standards. These and other national energy policy priorities such as air quality, security of supply and support for renewables will impact thermal coal in particular. Examples include:

- **Emissions trading schemes and taxes** – currently 40 national jurisdictions and over 20 cities, states and regions, representing almost 1/4 of global greenhouse gas emissions are putting a price on carbon⁶. Over time, the effectiveness of these schemes is expected to increase as the cost of carbon rises and grandfathering and early exemptions are slowly reduced.
- **Energy and resource efficiency** – as part of their carbon reduction commitments, most economies are committed to improving energy and resource efficiency by increasing energy efficiency standards in buildings, industry and transport, as well as improving rates of recycling and re-use of products. These ambitions are now summarised in the Intended Nationally Determined Contributions (INDCs) which have been submitted to the United Nations as part of the global climate change negotiations. As these goals are translated into policies which affect the wider economy, this could lead to step-changes in demand as final product design evolves to deliver greater resource efficiency across the entire life-cycle, including in manufacturing, use and end-of-use phases, leading to the use of fewer resources and greater utilisation of substitute resources.
- **Support for low carbon energy** – support for low carbon sources of electricity is widespread in developed countries and increasing in developing countries. The EU has adopted a target to achieve 27% renewable energy by 2030. In the US, the Environmental Protection Agency is implementing the Clean Power Plan to cut carbon pollution from the power sector by 30% from 2005 levels, with a focus on reducing thermal coal. China has announced a plan to peak greenhouse gas emissions and to increase the non-fossil fuel share of all energy to around 20% by 2030. As at end September 2015, 146 countries representing approximately 87% of global emissions have made pledges to reduce greenhouse gas emissions over the period to 2030.
- **Improving air pollution standards** – in addition to policy to reduce GHG emissions, many countries are also seeking to reduce the harmful impacts of coal-fired power and energy intensive industries on local air pollution. In the EU, the Industrial Emissions Directive is responsible for the early disclosure of a significant proportion of coal-fired power stations in Europe. Similar moves to improve air quality in China and other countries is also changing, both reducing demand for thermal coal and shifting demand towards higher quality, cleaner burning coal.

⁵ For example, in 2014, the Boundary Dam CCS power project in Canada commenced operations.

⁶ World Bank Group (2015) *State and Trends of Carbon Pricing*. Washington

Investor expectations

In order to ensure a robust business strategy based on a resilient portfolio of assets, as well as to encourage a smooth transition to a lower carbon and more resource efficient system, we have set out expectations and guiding questions for the Board of mining companies to consider. These are intended as parameters under which to ‘stress test’ business strategy to prepare for the next decade and beyond.

1 Governance

EXPECTATION: Clearly define board and executive management responsibilities and capabilities for managing climate change risks and opportunities in relation to the dynamics outlined above to set a long term strategy.

QUESTIONS FOR THE BOARD:

- **Capabilities** – who on your Board or Executive Management Team has expertise on the science and economics of climate change, including an understanding of the policies and technologies which are likely to prove disruptive to long term demand for key commodity groups?
- **Focus** – to what extent do alternative demand scenarios linked to climate change and other drivers (as outlined above) inform Board oversight of project approval and final investment decisions? How frequently and in which committees is climate change risk discussed?
- **Remuneration & KPIs** – what performance measures and targets are used? To what extent is remuneration aligned to project delivery and capital efficiency?

2 Operational efficiency and reducing greenhouse gas emissions

EXPECTATION: Set long term targets to both improve energy efficiency and reduce the carbon intensity and overall greenhouse gas emissions of mining and associated operations which are monitored and reported on to the Board.

QUESTIONS FOR THE BOARD:

- **Low carbon technologies** – what low carbon technologies is the company deploying in its operations to improve efficiency and reduce the carbon intensity of its operations? Is the company investing in renewable energy technologies?
- **Energy efficiency and carbon intensity** – does the company monitor and report on the energy efficiency, carbon-intensity and overall greenhouse gas emissions of its operations, both overall and by key commodity group?
- **Target-setting** – does the company have energy efficiency greenhouse gas emissions reduction targets in place? How does the company track performance against these targets, for both the group overall and by significant commodity type?



3 Strategy implementation

EXPECTATION: Integrate the management of climate change risks and opportunities into business strategy and ensure the business model is robust and resilient in the face of a range of energy demand scenarios through appropriate stress testing.

QUESTIONS FOR THE BOARD:

- **Scenarios** – what is your future energy and resource outlook and how would the business perform under conditions consistent with the IEA's global energy scenarios, including the IEA's 2°C (450 ppm CO₂e) scenario? In particular, how is demand for thermal coal impacted by shifts in energy usage and which commodity groups may benefit and which decline in the event of a more rapid move to a low carbon economy? How dependent on key technology developments such as carbon capture and storage are your scenarios? What other sources do you draw from to develop scenarios?
- **Carbon pricing** – do you use a shadow carbon price in your projections? Is there a single price or does it differ by jurisdiction? Do you stress test with a range of prices?
- **Demand, supply and price** – using different demand assumptions, what is the company's view on the changes to supply that are likely to take place and the resulting impact on commodities pricing over time?
- **Margin impact** – what is the margin impact for the business across different commodity groups as a consequence of changing commodity prices and changes in the cost of operations (including a cost of carbon). What is the average break even price and/or sensitivity of earnings to changes in commodity prices for each key commodity group in your portfolio?
- **Implementation** – based on the above analysis, what would be the impact on each of:
 - **Capital expenditure** – where do you think you are positioned in a lower demand/lower price scenario? What will be the implications for anticipated internal rate of return across key commodity groups over time? What are the consequences for capital expenditure by key commodity group?
 - **Portfolio composition** – is the balance of the current portfolio adjusted correctly for potential long-term shifts in commodity demand? Will there be any consequences for future portfolio construction e.g. via divestments, a spin-out of assets or demerger and what framework is in place to review this over time?
 - **R&D** – is the company investing in any new technologies which could transform demand for their product in low carbon scenarios, such as carbon capture and storage?

4 Preparedness for the physical impact of a changing climate

EXPECTATION: The company has appraised the risks to the business from ongoing changes to the climate and local weather systems and has put in place necessary plans to preserve the productivity and value of its assets.

QUESTIONS FOR THE BOARD:

- **Appraisal** – has the company appraised the likelihood of occurrence of adverse impacts arising from changes to the climate and local weather systems, including in the areas of:
 - Extreme weather events – such as storms, flooding or drought.
 - Water – either water stress arising from long-term changes to rainfall patterns which affect the availability of water from water courses and aquifers or which may increase rainfall and the challenges of water management.
 - Heat stress – arising from consistently higher temperatures.
 - Ground conditions – changing ground conditions arising from increases or decreases in temperature and water levels.
- **Planning and implementation** – how prepared is the company for the potential adverse impacts identified as part of the appraisal process? What investments or changes to operational practice are required to ensure the necessary level of adaptation to the changing climate?

5 Public policy

EXPECTATION: Engage with public policy makers and other stakeholders in support of cost-effective policy measures to mitigate climate change risks and support low carbon investments and/or ensure that the company does not lobby against these positions. Ensure there is broad oversight and transparency about the company's lobbying activity and political spending on climate and related energy and regulatory issues, across regions, consistent with its public policy position⁷.

QUESTIONS FOR THE BOARD:

- **Policy positions** – what are your positions in relation to climate and energy policy and how do these relate to company strategy? How are these positions made public? Is the company playing a leadership role in helping policy makers determine sustainable policies which balance the interests of multiple stakeholders and which are in the long-term interests of investors?

On the price of carbon and a 2°C future:	On specific regulations likely to impact the mining sector:
<p>What is your position on carbon pricing and how does this align with the shadow carbon price that you use in forecasts?</p> <p>Does the company support a long-term global emission reduction goal in the Paris agreement in line with limiting average global temperature increase to 2°C or below?</p> <p>Did your organisation support the World Bank's carbon pricing statement or other carbon pricing initiative?</p>	<p>What are your positions, and what policy outcomes have you advocated for with regards to the following pieces of climate regulation:</p> <ul style="list-style-type: none"> The U.S. Clean Power Plan The European Union Emissions Trading Scheme (EU ETS) The South African carbon tax due to be implemented in 2016 or later Chilean carbon tax due to come into force in 2018 The Australian Direct Action Plan

- **Activity** – how do you conduct your engagement with policy makers on a national and international level? What is the scale of spending on lobbying activity and how is this broken down? Describe your engagement with policy makers directly on the five specific regulatory strands mentioned above and any other regulatory strands you consider important for your business.
- **Trade associations** – what industry associations does your organisation have links with (including trade associations, chambers of commerce and business forums)? What is the governance process for managing these relationships and does your organisation participate in any committee or board level roles? What are each association's positions on the specific regulations listed above? How do you ensure consistency between your public positions on climate change and those of your trade associations? What (oversight) processes do you have in place for this and what actions are you taking to ensure consistency where there is a misalignment?

⁷ See Investor Expectations on Corporate Climate Lobbying (2015) which is supported by a group of 53 investors representing more than \$US 3.3 trillion in AUM. Available at: <http://unpri.org/corporateclimatelobbying>

6 Transparency & disclosure

EXPECTATION: Disclose in annual reports and financial filings the company's view of and response to each of the questions set out in this document.

QUESTIONS FOR THE BOARD:

- **Governance** – have you set out your governance arrangements, including on board capabilities and areas of focus.
- **Operational efficiency and reducing greenhouse gas emissions** – have you published the low carbon technologies you are investing in and your energy efficiency and greenhouse gas reduction targets?
- **Strategy implementation** – have you published the scenarios used to stress test your current future potential portfolio against, the range of carbon prices used, the impact of each scenario on demand, supply and price, the margin impact and the impact on strategy (capital expenditure plans, portfolio composition and R&D)
- **Preparedness for the physical impact of a changing climate** – have you published the methodology for appraisal of the risks, including your assumptions around the timing and impact of potential changes to the climate, the consequences for value and mitigating actions?
- **Public policy position** – have you published your position on public policy, including whether you are aligned to the goal of investors to limit climate change to 2°C and the way in which you ensure that industry associations that you are associated with/members of are consistent with your position?

Which CDP data points align with the expectations and questions in this guide?

In order to assist investors in identifying relevant information on carbon asset risk within CDP's dataset and inform their engagement activities with mining companies, CDP has prepared a document which links relevant questions from CDP's 2015 climate change questionnaire with the expectations and guiding questions in the Investor Expectations of Mining Companies.

The CDP Linkage table is available online at <http://www.iigcc.org/publications/publication/linking-cdp-and-gics-investor-expectations-of-mining-companies>



The **Institutional Investors Group on Climate Change (IIGCC)** is a forum for collaboration on climate change for investors. IIGCC's network includes over 118 members, with some of the largest pension funds and asset managers in Europe, representing €12 trillion in assets. IIGCC's mission is to provide investors a common voice to encourage public policies, investment practices and corporate behaviour which address long-term risks and opportunities associated with climate change. Visit www.iigcc.org



The **Investor Network on Climate Risk (INCR)** is a North America focused network of institutional investors dedicated to addressing the financial risks and investment opportunities posed by climate change and other sustainability challenges. INCR currently has more than 100 members representing over \$13 trillion in assets. INCR is a project of Ceres, a nonprofit advocate for sustainability leadership that mobilises investors, companies and public interest groups to accelerate and expand the adoption of sustainable business practices and solutions to build a healthy global economy. Visit www.ceres.org



IGCC is a collaboration of 60 Australian and New Zealand institutional investors and advisors, managing over \$1 trillion and focusing on the impact that climate change has on the financial value of investments. The IGCC aims to encourage government policies and investment practices that address the risks and opportunities of climate change, for the ultimate benefit of superannuants and unit holders. Visit www.iigcc.org.au



The **Asia Investor Group on Climate Change (AIGCC)** is an initiative to create awareness among Asia's asset owners and financial institutions about the risks and opportunities associated with climate change and low carbon investing. AIGCC provides capacity for investors to share best practice and to collaborate on investment activity, credit analysis, risk management, engagement and policy. With a strong international profile and significant network, including pension, sovereign wealth funds, insurance companies and fund managers, AIGCC represents the Asian voice in the evolving global discussions on climate change and the transition to a greener economy. Visit <http://aigcc.asria.org/>