

Mining and Metals Scenarios

Australian Workshop Session Summary

Melbourne, Australia, 28 September 2010



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Overview and Key Outcomes

On 28 September 2010 the World Economic Forum; Minerals Council of Australia; CSIRO and the Institute for Sustainable Futures, UTS – collectively hosted an interactive workshop looking at the future of Australia's mining and metals industry. Over the course of the day, the group of 30 participants explored the implications of **global megatrends** for Australia under three scenarios prepared by the World Economic Forum's scenario planning team.

The primary goals of the workshop were:

- To explore the “**future context**” of Australia's minerals industry via work developed by the Forum and CSIRO/UTS, including better understanding the assumptions and perspectives of the forces that have the ability to shape the industry.
- To consider **strategies** at the organizational, industry and policy levels to prepare Australian industry for the challenges and opportunities presented by relevant global shifts.

In addition to dynamic discussions on the implications of the megatrends and scenarios and input into ongoing work by CSIRO and the Forum, three key issues arose of significant importance to the group:

- **Community engagement strategies** that focused on better dialogue, community empowerment and capacity building, and sharing the benefits of resource extraction.
- A more practical and actionable focus on **sustainability** for the minerals sector that accounts for the true costs and benefits to stakeholders – including environmental impacts, social effects and economic benefits in an integrated model.
- The source of **Australia's future global competitiveness** and what is needed today in terms of investment and preparation by the minerals industry. Here there was discussion of the role of risk and innovation, the role of the services sector, technological advances, infrastructure development and the mechanisms by which Australia might ensure that investment capital is sufficient.

The session also asked participants to consider practical actions that could be taken to deepen understanding and have impact on the issues above. These included:

- Put together the “skeleton” or framework for a **national mining strategy**, comprising goals and visions from the community and industry perspectives, to answer the question: *What does a sustainable Australia look like and how does mining fit within this?* This strategy would explicitly explore the role of mining in Australia's economic and social development from a national perspective and highlight the long-term goals for the industry.
- Linked to this strategy, developing a **rating system for mining operations** that would cover downstream technologies, innovation, efficient extraction, cost efficiencies, environmental and social impacts, knowledge sharing and capacity building, community engagement, restorative actions etc, with independent performance verification.

Summary of discussion points

Understanding the global context and “megatrends”

Five megatrends were presented by Stefan Hajkovicz from CSIRO and discussed by participants:

- **More from less** – related to the world's depleting natural resources and increasing demand for those resources through economic and population growth.
- **A personal touch** – the growth of the services sector of Western economies is being followed by a second wave of innovation aimed at tailoring and targeting services.
- **Divergent demographics** – the populations of OECD countries are ageing and experiencing lifestyle and diet related health problems. Meanwhile, high fertility rates and food shortages for millions of people in low-income countries creates a developed-developing country divergence.

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- **On the move** – people are changing jobs and careers more often, moving house more often, commuting further to work and travelling around the world more often.
- **i World** – everything in the natural world will have a digital counterpart. Computing power and memory storage are improving rapidly. Many more devices are getting connected to the internet.

Of these megatrends, the most relevant was seen to be “more from less”, with implications for energy efficiency, links to the freezing of LNG for transport, and the technological impacts from the “low-hanging fruit” being exhausted in resource extraction. However “i-World” would also have interesting implications, particularly for the rare-earths sector as well as increasing transparency on supply chains.

The implications of these trends for the mining industry in Australia were assessed together with future infrastructure needs identified by the Minerals Council of Australia in its Vision 2020 report.

Community engagement and trust-building

It quickly became clear that a key concern for participants was the issue of community engagement and development in the Australian context. Discussion points included:

- The implications of technological development to remote communities: there are perceived trade-offs between technological development and employment, but rather than seeing technological advancement as a zero-sum game, Australian firms need to be more creative in formulating strategies for employment growth in the community.
- Increased transparency seems inevitable, particularly as communication technologies connect more and more people around the world. This will increase pressure on transparency regarding how mining companies make decisions, particularly those that impact local communities. A corresponding increase in the sophistication with which companies engage in dialogue with communities is required.
- There are clear links between the pressures surrounding and driving community engagement and the issue of the resource tax and other forms of “benefit sharing”. What are the leading practices in terms of investing for the community, particularly when governance issues arise, and how might these be improved at a regional or national level?
- The value of understanding the community’s vision for the future of mining in Australia. Gaining insight into the community’s wants, values, and expectations of the mining industry would provide industry with the ability to foresee community support for certain actions/decisions/strategies and would influence investment decisions.

Sustainability and links to existing business models

The second clear theme of discussion related to the issue of sustainability. Discussion points included:

- Is there a “practical” way of viewing the issue of sustainability from a mining industry perspective? The Brundtland definition of sustainable development (development that meets the needs of the present without compromising the ability of future generations to meet their own needs) was seen by some as lacking specificity in terms of actions, while others viewed sustainability as a requirement that business models in the industry be redesigned so as not to impose net costs on environment and social structures while seeking economic returns.
- Sustainability is seen primarily as a risk to the industry, as it implies changing behaviours, technologies and processes, all of which come with costs and uncertain returns. This is a challenge both at the CEO level and the site manager level, which interestingly have similar job lifespans (3-4 years) in which short-term goals are emphasized.
- However sustainability is not just a moral imperative; it also reflects changing demands downstream and represents an opportunity for value creation. How can those opportunities be captured by upstream industries such as the metals and mining sector?
- Emerging from this, a real need was seen for stakeholders in Australia (including governments, communities and the mining industry as a whole) to have a common understanding of “a sustainable Australia” and the role of the mining industry in this. It was suggested that the group explore the development of a framework for a national mining strategy in a multi-stakeholder context.

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Australia's future global competitiveness and investing for the future

The third discussion theme was of Australia's global position. Discussion points included:

- What should be the goals for the mining industry in terms of national economic development and global competitiveness – extract as fast as possible, or at a rate that is deemed 'appropriate'? If the latter, who decides this rate and on what basis – social and environmental standards? What controls the current rate? This should link to the national mining strategy mentioned above.
- A focus on the development of linked industries that do not necessarily involve the direct extraction of minerals. An example was given of mining software – according to participants, 70% of global mining software used is Australian. This highlights a range of opportunities involving services, including exporting knowledge in addition to resources. However opportunities such as these might need to be identified more specifically, clearly communicated, and receive support under a national strategy.
- How might the gains from the minerals industry be effectively re-invested for Australia's future? Participants reflected on the significant controversy over the design and implementation of a resources tax, but also expressed the view that a practical implication of Brundtland's definition of sustainability could be the need to invest a portion of the profits gained by extracting resources today for future generations. Participants debated the mechanisms that could possibly support such an action.

Reflections on the scenarios

The World Economic Forum continues to extend and use its scenarios on the Future of Metals and Mining in workshops around the world. Hence this session was an opportunity to get valuable feedback from the Australian perspective.

Green Trade Alliance

Overview: In 2030, the world is divided and countries are defined economically by whether or not they belong to the Green Trade Alliance (GTA), formed in 2016 to promote "environmental sustainability without compromising competitiveness." GTA countries, including some industrialised, resource-rich and developing countries, have experienced a period of accelerating innovation and lifestyle changes. While there is strong alignment among GTA countries, non-GTA countries operate independently.

- This world was a controversial one for participants. Some questioned its plausibility, and questioned the positioning of China in the "non-GTA" bloc.
- CEO concerns in this world would be firms split between GTA and non-GTA countries, who would nevertheless look to make gains through arbitrage while warding off potential sanctions. Another concern would be managing traceability of goods to avoid parallel importing, black market goods etc.
- The primary GTA government concerns in this world would be how to manage international firms in the context of fair taxation and alliances with other countries.
- One table considered the fact that Australia is a diverse country state-wise, and WA and QLD might attempt to break away from the rest of Australia if it decided to join the GTA. Another issue is the fact that if China is NOT in the GTA, it would be hard for Australia to join given trade ties.
- Other participants discussed the legality of the Green Trade Alliance, suggesting that the inability to trade freely would result in resource-based conflicts and possibly outright war.

Rebased Globalism

Overview: In 2030, the world is committed to realising the benefits of global interconnection but has become far more complex and multipolar. Power comes from control of resources as well as possession of capital, with resource-rich countries playing by their own rules. Civil society has gained power, resulting in various local laws that affect global corporations.

- In this world participants thought that accessing resources in emerging economies would become more difficult, with a greater focus on community development, human rights and local skill development required thanks to heightened transparency and the increased power of civil society.

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- The Australian government would be concerned with its level of power over increasingly consolidated multinational firms, and look to leverage Australia's resources for international power.
- In this world, part of "Brand Australia" would be an emphasis on the social benefits brought by mining, moving away from an emphasis on pure economic benefits.

Resource Security

Overview: In 2030, the era of globalisation is a distant memory as nations prioritise narrow self-interest. They hoard domestic resources, enter cartels based on regional and ideological alliances and resource blocs, and engage in neo-colonialism and import substitution strategies.

- This was a confronting scenario for participants, with concerns about the ability of global mining firms to operate across borders and being "captured" by governments, with heightened government intervention being likely. Here, companies would look multi-regional or local, but would actually be global as much as possible.
- There was the sense that this world, at its extremes, could severely threaten Australia's mining industry, particularly as Australia requires global demand thanks to a small domestic market.
- Key alliances would be crucial, particularly with countries with high resource reliance such as China, Brazil etc. Diplomatic complexity would favour firms with scale and expertise to handle delicate international relationships while standing "above" national disputes as much as possible.
- The Australian Government in this world would be concerned about security issues – energy, military and resource security. It would seek to sell as little resources as possible at the highest price.

Next steps

Getting involved

The World Economic Forum, CSIRO and the Institute for Sustainable Futures, UTS would very much appreciate your further thoughts on these megatrends, scenarios and the critical issues facing the future of Australia's minerals industry, particularly from the perspective of sustainability. For more information please contact:

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| Sharif Jahanshahi | Theme Leader | Commonwealth Scientific and industrial Research Organisation (CSIRO) |
| Frank Jensen | Business Development and Commercialisation Manager, Information Engineering | Commonwealth Scientific and industrial Research Organisation (CSIRO) |
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| Tim Muster | Team Leader, Functional Interfaces | Commonwealth Scientific and industrial Research Organisation (CSIRO) |
| Kevin Rogers | Science Manager, Light Metals Flagship | Commonwealth Scientific and industrial Research Organisation (CSIRO) |
| John Fennell | Chief Executive Officer | Copper Development Centre |
| Geoff Edwards | Principal Policy Officer | Department of Employment, Economic Development and Innovation |
| Nick Birch | Assistant Manager | Department of Resources Energy and Tourism |
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| Timothy Prior | Research Principal | Institute for Sustainable Futures, UTS |
| Ashley Mason | Executive General Manager Operations | Leighton Holdings Ltd |
| Leah Weckert | Associate Principal | McKinsey & Company |
| Christine Charles | Environment and Social Policy | Minerals Council of Australia |
| Melanie Stutsel | Director - Health, Safety, Environmental & Community Policy | Minerals Council of Australia |
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| Lindsay Kirsner | Mining Executive, Copper | Rio Tinto Ltd |
| Dan Atkins | Managing Director | Shaper Group |
| Joe Herbertson | Founding Principal | The Crucible Group Pty Ltd |
| Chris Moran | Director, Sustainable Minerals Institute | The University of Queensland |
| Ron Johnston | Executive Director, Australian Centre for Innovation | University of Sydney |
| Jan Klawitter | Associate Director, Head of Mining & Metal Industry, Global Leadership Fellow | World Economic Forum |
| Nicholas Davis (facilitator) | Associate Director, Scenario Planning and Global Risks | World Economic Forum |