

Summary Report

AusIMM ESG and Social Responsibility Forum II





About AusIMM

The Australasian Institute for Mining and Metallurgy (AusIMM) is the peak body for all resources professionals, with over 13,000 members across more than 110 countries. Established in 1893 and operating under Royal Charter, we represent professionals across all levels of the mining industry, working from exploration through to delivery, and in disciplines ranging from mining engineering to geoscience, health and safety, finance, government and academia.

We lead the way for all people in resources, supporting professionals to provide enduring benefits for the community. We are committed to upholding ethics, codes and standards in resources and delivering the highest quality of professional development to the sector.

As the trusted voice for resources professionals, we exercise shared leadership to benefit all members of our global community. We advance our sector's continued technical and professional leadership on the world stage, champion community understanding and support for the industry, and work with governments to design, implement and maintain regulatory frameworks that facilitate the continued economic and social contributions delivered through mining.

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List of abbreviations

AusIMM	– Australasian Institute of Mining and Metallurgy
CP	– Chartered Professional
ESG	– Environment Social and Governance
ESIA	– Environmental and Social Impact Assessment
ICMM	– International Council for Mining and Metals
JORC	– Joint Ore Reserve Committee, see www.jorc.org
LOM	– Life of Mine
MCA	– Minerals Council of Australia
NGO	– Non-Government Organisation
NPV	– NPV
PFS	– Pre-Feasibility Study
PMLU	– Post Mining Land Use
QRC	– Queensland Resources Council
UNEP	– United Nations Environmental Program
VALMIN	– The VALMIN Code, see www.valmin.org

Executive summary

AusIMM's second forum addressing Environment, Social and Governance (ESG) and social responsibility was held online on 7-8 October 2021. The forum sought views from participants to guide AusIMM's ESG and social responsibility 'action agenda' over the next two years.

AusIMM provided forum participants with a pre-reading pack that outlined the context, trends and contemporary expectations of the minerals sector. The pack included AusIMM's Social Responsibility Framework, and the report of the inaugural forum held in 2009. An opening plenary provide further context, with conversations on the first day featuring Professor Daniel Franks and panellists Stephen McIntosh, Jill Terry and Tim Gerrard.

Participants took part in hour-long breakout sessions with a designated theme led by a facilitator using focusing questions to guide discussion. The primary purpose was to identify key ESG and social responsibility imperatives for AusIMM with recommended actions for consideration by the Policy and Advocacy Committee and the Board. Observations and recommendations arising from the breakout sessions are noted in the main body of this report and synthesised in this executive summary.

ESG and social responsibility involves a complex range of themes, drivers and stakeholders at the interface of the minerals sector, government and broader society. These are recorded as discussed in the breakout session notes and interpreted in the synthesised recommendations in terms of 'what should AusIMM do'.

The recommendations fall into two categories:

- Affirmation that AusIMM should continue its ESG related initiatives and activities already underway - these are described below as "Continuing imperatives".
- AusIMM should consider suggestions for new actions and enhancements, to further develop its ESG profile and leadership for members - described below as "actions".

In summary, participants wish to see AusIMM attention to ESG related matters continue and noted there is a need for guidance, training and certification at all professional levels, including corporate, financial and investor governance. Some important themes to emerge were:

- The need to operationalise the Brundtland definition of Sustainable Development into a mining context,
- Recognition that mineral resource projects are transitory and serious attention must be directed to mine closure, site remediation and post-mining land use, and
- The need for sound consent and responsibility agreements with materially affected landholders and custodians.

Overall, participants noted a real opportunity for AusIMM to be recognised broadly as a progressive and responsible institution providing important guidance to its professional members as the 'Trusted Voice' of the minerals sector.



Continuing imperatives

IMPERATIVE
The forum was a vital further step in evolving the AusIMM's ESG agenda as part of its Trusted Voice initiative. Further actions will help to maintain momentum on the substantial ESG related progress AusIMM has made over the last two years.
Policy and program development concerning ESG related matters, consistent with AusIMM's Royal Charter, should continue through relevant working committees as well as the AusIMM Policy and Advocacy Committee and Board.
AusIMM should continue to focus on developing membership awareness, understanding and competency on ESG related matters, and promote its Code of Ethics and Social Responsibility Statement.
AusIMM should continue to leverage its strong brand position to nurture ESG related performance through: <ul style="list-style-type: none"> • undergraduate education, • broad ESG upskilling of minerals sector professionals, and • specific professional recognition of Environment and Social Performance practitioners
AusIMM should take a leadership role in pursuing cross-sectoral consistency and discourse regarding ESG performance, monitoring and report. AusIMM has an important role to play in collaborating with kindred professional bodies around the globe and across the minerals, finance and tertiary education sectors.
Recognising that there is a plethora of international instruments seeking to regulate and influence the minerals sector, ¹ AusIMM should continue to review and identify for its members those that have currency and particular utility for specific purposes.
Continue to deliver and enhance ESG in AusIMM's relevant training/guidance courses, and particularly its ESG and Social Responsibility Professional Certificate course.

¹ Not counting jurisdictional requirements, there are currently more than 90 global 'instruments' (principles, standards, codes, guidelines) of various kinds that relate to the minerals industry.

Actions

	ACTION FOR CONSIDERATION
CODES	The AusIMM (as a parent body of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ('the JORC Code')) should help develop clearer guidance for the transparent disclosure of material ESG matters in the public reporting of Exploration Results and Targets, Mineral Resources and Ore Reserves, including a common set of reporting indicators.
	Develop and promote the use of a common set of ESG related JORC reporting indicators for wider application, including for due diligence related to asset closure, mergers and acquisitions.
STANDARDS & GUIDANCE	ACTION FOR CONSIDERATION
	Develop an assessment framework matched to AusIMM Level III ESG Competency to guide career development for Environmental and Social Performance practitioners and assessment of Chartered Professional candidacy.
	Position Environment and Social Performance Chartered Professionals as potential Verification Service Providers in the Towards Sustainable Mining program adopted by the Minerals Council of Australia.
	More broadly, promote AusIMM Environment and Social Performance Chartered Professional status to organisations such as the ICMM regarding independent investigation and review of ESG related matters in the minerals sector.
	Endorse where appropriate the importance of due diligence and independent auditing and investigation of ESG related matters throughout the life cycle of a project, to ensure delivery on commitments does not drop off once finance is secured.
Ensure ESG related professional competency requirements are properly defined and assessed on an on-going basis with active feedback provided during the Chartered Professional application and audit process.	
Develop a publication on ESG related matters in the minerals sector that includes a section on what constitutes "Sustainable Mineral Resources Development" with attention to sustainable outcomes in future minerals projects consistent with the Brundtland (1987) definition of sustainable development.	



Introduction

ESG performance is now a significant consideration in the initiation, financing and operation of many mineral resource development projects world-wide. AusIMM, as a peak body representing all resource sector professionals, takes a lead role in setting professional standards for its members across all disciplines.

ESG related standards are no exception.

The Social Licence Forum I in May 2019 led directly to the AusIMM ESG and Social Responsibility 'action agenda' for 2020 and 2021 with the following achievements:

- Development and launch of the AusIMM Social Responsibility Statement and Framework
- Refinement of Environmental Performance Area of Practice Competencies for AusIMM Chartered Professionals
- Development of Social Performance Area of Practice Competencies and establishment of new AusIMM Chartered Professional discipline
- Development of the ESG and Social Responsibility Professional Certificate course, with sold out first intake, scheduled twice in 2022
- ESG addressed directly as part of JORC and VALMIN Code renewal
- ESG and Social Responsibility Forum II in October 2021

Building on these achievements, the second forum aimed to gain input and guidance from participating members for an AusIMM ESG related 'action agenda' for 2022 and 2023.

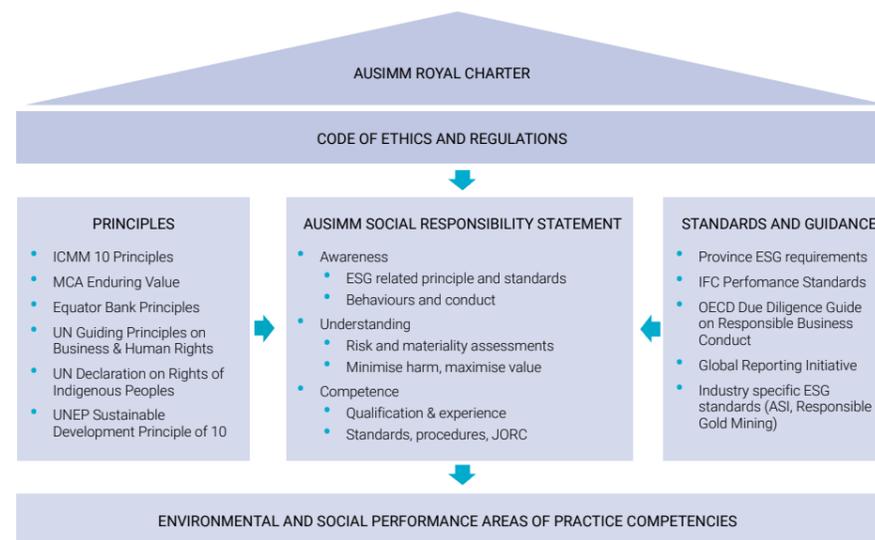


FIGURE 1: AUSIMM SOCIAL RESPONSIBILITY FRAMEWORK FORECAST

ENGAGEMENT	ACTIONS FOR CONSIDERATION
	Continue to engage with the MCA and State Resource Councils on ESG related matters.
	Consider hosting ESG related 'teach-ins' (2-3 hour interactive sessions): <ul style="list-style-type: none"> • For groups of minerals company board members and senior executives. • For minerals sector professionals across all disciplines, particularly to people in External Affairs, Corporate Affairs, Government Relations, Human Resources, Finance and Procurement roles.
	Consider conducting 'Teach-ins' with other key professional bodies such as the Governance Institute of Australia, Australian Institute of Company Directors (AICD), Institute of Directors in New Zealand (IDNZ), Australian Institute of Management (AIM) and Australian Institute of Geoscientists (AIG).
	Pursue opportunities to link with organisations like the Governance Institute of Australia (GIA) and the Australian Institute of Company Directors (AICD) to offer board readiness training to technical and operations experienced professionals to support their recruitment on to minerals sector boards.
	Where appropriate, engage with other professional institutes, such as those representing civil engineering, agricultural science and infrastructure planning, to design short course material in specialised areas such as postclosure land use. Promote novel concepts like mining heritage and geotourism, waste management and renewable energy installations.
	Look to host more conference and professional development activities (such as road shows and 'Teach-ins') on ESG related innovation, such as preconcentration, postmining land use, decarbonisation finance and valueoptimisation metrics. on-going basis with active feedback provided during the CP application and audit process.
	Encourage ESG competent AusIMM members to engage with relevant stakeholder groups, including at secondary school level, where societal influencing is initiated.

TRAINING	ACTIONS FOR CONSIDERATION
	<ul style="list-style-type: none"> • Continue to develop ESG related content and expand AusIMM's professional education portfolio to include specialised areas not adequately covered by tertiary teaching institutions. Some key topics for consideration include tailings management, waste reprocessing and reuse, mine closure transitioning, mineral sector contributions to the 'green economy', environmental and social performance specialisations.
	<ul style="list-style-type: none"> • Promote and make the above content available as modular sub-courses at appropriate tertiary courses using experienced AusIMM members as tutors. Seek government assistance to help fund this.
	<ul style="list-style-type: none"> • Assess publicly available audit and review that might be suitable for AusIMM members to augment their technical competencies, and potentially qualify as independent reviewers. If none are deemed sufficiently tailored to the minerals sector, consider developing an AusIMM Professional Certificate short course.
	<ul style="list-style-type: none"> • Include suitable ESG related content in all AusIMM Professional Certificate course work, in particular courses such as Study Guidelines and Cost Estimation.

Forum approach and participation

AusIMM hosted the ESG and Social Responsibility Forum II online on the 7 and 8 October 2021, using the OnAir platform.

Some 70 AusIMM members registered for the forum and 51 participated in live sessions. While every attempt was made to attract representatives from as many AusIMM Communities of Interest as possible, participation was weighted to several branches, notably Southwest WA and Adelaide, and the Social and Environment, and Consultants Societies.

A participant registration fee of \$50 was charged to help off set the Forum running costs, which were otherwise underwritten by the Social and Environment Society and the Consultants Society.

The Forum was designed to follow up on the Social Licence Forum (Forum I) held in May 2019, and was postponed several times due to COVID-19 restrictions, resulting in a longer than ideal time lag between the two forums; it was eventually convened online to avoid further delay.

The Forum program is summarised at Figure 2, overleaf.

Forum program

The forum was opened by Janine Herzig with a welcome and acknowledgement of the various Indigenous traditional custodians of the lands where the forum delegates were situated. Bruce Harvey then described the context of the forum and a broad overview of its aims and format.

Day one was aimed at discussing stakeholder perspectives on the ESG and social responsibility expectations of the sector.

Day two was aimed at discussing responses to these expectations through mine life cycle stages, and how the AusIMM might help prepare its members and the resources sector generally to meet these expectations.

FIGURE 2: SOCIAL RESPONSIBILITY FORUM II PROGRAM

DAY ONE		
45 min plenary with Q&A session	1.00pm - 1.05pm	AusIMM Welcome
	1.05pm - 1.20pm	Forum overview
	1.20pm - 1.45pm	Scene setting presentation from Professor Daniel Franks - Author of <i>Mountain Movers</i> and contributor to UN Environment Assembly Resolution on Mineral Resource Governance
BREAK	1.45pm - 2.00pm	Networking Break
60 min breakout discussion Groups	2.00pm - 3.00pm	Topic 1 - Society
		Topic 2 - Sustainability
		Topic 3 - Investors, Lenders and Shareholders
		Topic 4 - Workforce
BREAK	3.00pm - 3.15pm	Networking Break
50 min Group Presentations	3.15pm - 4.05pm	5 minutes for each group to present their findings
25 min plenary & close day 1	4.05pm - 4.30pm	Outcomes from Day 1 and close from Session Chair
30 min discussion	4.30pm - 5.00pm	Discussion with Facilitators & Notetakers
DAY TWO		
30 min plenary with Q&A session	11.00am - 11.15am	AusIMM Welcome from Session Chair and Overview of Day 2
	11.15am - 11.30am	Panel Questions and Discussion - Steve McIntosh, Tim Gerrard, Jill Terry
60 min Breakout Discussion Groups	11.30am - 12.30pm	Topic 5 - Exploration Stage
		Topic 6 - Mining Approach
		Topic 7 - Mineral Processing and Waste Management
		Topic 8 - Mine Closure Planning, Transition and Repurposing
BREAK	12.30pm - 12.45pm	Networking Break (15 min)
45 min group presentations	12.45pm - 1.30pm	5 minutes for each group to present their findings
BREAK	1.30pm - 1.45pm	Networking Break (15 min)
60 min plenary & close day 2	1.45pm - 2.45pm	Panel discussion and questions - Outcomes from Day 2 and close from Session Chair

The welcome and overview was followed by a 'keynote conversation' led by Janine Herzig with Professor Daniel Franks, author of the book *Mountain Movers* and a lead contributor to the UN Environmental Program (UNEP) report *Mineral Resource Governance and the Global Goals: An agenda for international collaboration*. Day one breakout sessions, described below, and report back then proceeded.

Day 2 commenced with a plenary Q&A session facilitated by Bruce Harvey with the following panellists:

- **Jill Terry** - Head of Mineral Resource Management for Newcrest and, as a member of the JORC Executive Committee for over 10 years, currently leading the ESG workstream for the JORC 2022 update.
- **Stephen McIntosh** - until his retirement from Rio Tinto in 2020 Steve led the Growth & Innovation Function. In this role he had direct accountability for staff and contractors operating in more than 30 countries covering most of Rio Tinto's global technical functions including exploration, studies, construction, technical services, Information Technology, data science, robotics & automation, R&D, asset closure, and for the last year he also led the global health, safety, environment, and security function. Prior to that he was Rio Tinto's global Head of Exploration.

- **Tim Gerrard** - with degrees in mineral technology and commerce, Tim is a Portfolio Manager at Janus Henderson Investors, helping select investments across Global Natural Resources, including agriculture, with emphasis on ESG and decarbonisation.

On both days, participants were assigned to breakout groups semi-randomly with some minor reassignment to ensure balance of discipline, background and experience. Participants were free to switch sessions, however most attended their assigned breakout.

Each breakout group had a facilitator and note takers drawn from ESG Committee and AusIMM Management Team members. Each facilitator was free to run the sessions as they saw fit with reference to organising committee agreed questions to guide discussion over one hour. The last question in each session was along the lines "What (more) does AusIMM need to do to advance the response of the minerals sector to ESG expectations and professional social responsibility when it comes to #####"? At the conclusion of the breakout sessions, the key takeaways for each topic were documented and reported back to plenary by the respective session facilitator.



Day one opening plenary

Professor Daniel Franks provided an overview of the United Nations Environment Assembly Resolution on Mineral Resource Governance.

He described the global consultations conducted with 123 nations, which attracted numerous submissions on how the minerals sector can contribute to human development. He observed that the sector, through the Mining, Minerals and Sustainable Development Project and the establishment of the International Council for Mining and Metals (ICMM), began to address issues of public trust in the early 21st century only to suffer setbacks in recent years due to catastrophic tailings dam failures and cultural heritage destruction.

Societal expectations of all industry sectors are now being expressed through the language of ESG, with particular emphasis on reporting and verification of metrics.

The minerals sector has some advantages over other sectors through being an early mover in adopting this approach in response to social opposition over three decades.

Research has quantified the substantial cost to minerals businesses from this social opposition and conflict. The costs come in the form of lost production, demands on senior management time, and project delays and termination, leading to direct hits on business NPV. Importantly, society and investors are starting to recognise the difference between good and bad operators, expressed in ESG metrics.

Day one breakout sessions

External stakeholder perspectives

Topics for the day one breakout groups were:

- Society
- Sustainability
- Investors, Lenders and Shareholders
- Workforce

Each breakout group focused on some key questions and a report back was provided to a plenary by the breakout leaders.

Breakout 1 – Society

Focusing question: Which should be paramount? Broad (global) societal expectations, national (regulatory) agendas, or the views of (local) people directly affected by mining activity?

Discussion: A range of different stakeholder groups and factors are involved in driving organisations to embed social value in their operations. The views expressed in the session highlighted these can come from a range of sources including:

- Government policy and legislation
- Bottom up (affected community) and top down (policy) approaches
- Businesses seeking to differentiate in the market to avoid negative sanction and attract quality staff.

The discussion included a number of examples of how this plays out in practice. Examples were provided from New Zealand, where there is a legislative requirement to return land to the same or better condition than it was before mining activity. This has led New Zealand operators to actively pursue a position as a 'miner of choice' for the community.

Participants noted that company boards and executive leadership need to drive change through a business with performance metrics and through culture. When it comes to AusIMM, the participants' view was that members need to understand that they have a professional and personal responsibility for ESG performance, and that it needs to be adequately addressed and resourced.

Focusing question: What is a good way to formalise the mutual expectations of mining/metals operations and affected community groups (e.g. strong regulatory controls, or local level agreements)?

Discussion: Community consultation is vital. In particular, an emphasis should be put on what can be done about the legacy that mines leave behind. The sector needs to think about the end solution when it is developing a new mine and when operating. Working with governments and affected communities to think about positive post closure legacies to address the perception of a poorly regulated and irresponsible sector.

The sector needs to fix the backlog of legacy issues collectively. There needs to be rectification of historical legacies from minerals businesses to affected communities and the environment, however there is a propensity amongst some companies to take a legalistic approach rather than addressing these legacies in a more substantive way.

Focusing question: What (more) does AusIMM need to do in order to advance the response of the minerals sector to societal ESG expectations and our members professional social responsibility?

Discussion: AusIMM professional members in executive roles can be in charge of operations, but may not be in charge of the business. Many companies do not have AusIMM members on their boards and are not aware of the high ethical level AusIMM holds its members to. Traditional Owners are not talked to enough to be onboard and understand their role in ESG related performance.

Breakout 1: Key points

- AusIMM should engage with senior executives and board members to raise the importance of ESG and the role of leadership in changing industry practices around ESG and social responsibility.
- AusIMM in partnership with other sector associations should develop a series of standards that are independent and aligned to AusIMM values.
- Understanding that there is no such thing as a unified social view, certification of roles and standards is needed, reflective of jurisdictional requirements across Australia, New Zealand, Africa and Asia.

² Editorial note – not counting jurisdictional requirements, there are currently more than 90 global 'instruments' (principles, standards, codes, guidelines) of various kinds that relate to the minerals sector.

Breakout 2 – Sustainability

Focusing question: *Is it possible for the minerals sector to be sustainable and to present itself as such (and be trusted) to the wider world?*

Discussion: The minerals sector suffers from a lack of trust from wider society and appears to be reluctant to address this concern. The sector has been slow to embrace sustainability as described in Daniel Franks presentation and is generally very conservative. Failure to engage properly, and with due humility, to build trust is impacting many aspects of the minerals cycle, including recruiting, permitting issues and investment costs and availability of investment finances.

Focusing question: *How can the development of ESG be used to bring a more disciplined understanding of sustainability expectations to the resources sector?*

Discussion: Guidance is required to define rational expectations for the delivery of sustainable projects which engender trust from society. Concepts put forward included:

- Embracing the Circular Economy,
- Defining pre-requisites for products which minimise adverse and maximise positive outcomes taking in to account social and environmental expectations.
- At the outset of mineral projects negotiating binding agreements with materially affected landholders/ custodians, and
- The issue of asset transfers between parties was discussed, with assignment of responsibilities existing under agreements needing to be obligatory.

Focusing question: *Does ESG related (sustainability) performance reporting provide an opportunity for minerals companies to build greater trust with all stakeholders? If not, what needs to change to better achieve this?*

Discussion: Minerals companies need to report ESG performance consistent with the Global Reporting Initiative (GRI). The reports must be kept simple and should be transparent and meaningful to readers, free from “greenwashing”. Local reports on performance against indices is one area for improvement and greater transparency. There needs to be consistency in the reporting so that readers can trust the reports. It was noted that accredited professionals are likely to be better trusted than corporations and could sign off these reports.

Focusing question: *What (more) does AusIMM need to do to advance the response of the minerals sector to ESG expectations and professional social responsibility when it comes to sustainability expectations?*

Discussion: Further to the contributions recorded above, the discussion here is reflected in the key takeaways for the session outlined below.

Breakout 2: Key points

- Based on the Brundtland definition of sustainability, the minerals sector needs to consider how it can work towards meeting societal expectations, including through co-design and listening to external parties.
- AusIMM should define a list of indices metrics to report to:
 - materially affected landholders/custodians
 - broader community groups
 - society in general
 - financial institutions, and
 - government/regulators.
- AusIMM should develop micro-credential training for professionals wanting to be involved in robust and defensible sustainability reporting.
- AusIMM should develop and distribute a monograph which sets out definitions of what constitutes “Sustainable Mineral Resources Developments”.
- Reporting against agreed indices needs to be included in the JORC code.
- AusIMM should develop a code of conduct for professionals so that society is aware of what is an acceptable behaviour benchmark.
- The minerals sector needs to develop a consistent approach to information to be included in asset transfer, closure site rehabilitation, relinquishment and repurposing.

Breakout 3 – Investors, lenders and shareholders

Focusing question: *Is there enough clarity and detail coming from the finance sector regarding performance indicators to assist resource professionals to meet ESG related and social responsibility expectations?*

Discussion: The sentiment in the breakout room was a clear ‘no’: the finance sector is not consistent nor clear in its understanding of ESG related details, nor can it (by itself) provide specific advice on what it really requires. SME’s frequently must provide guidance, feedback and education to those requesting expert advice, even on which of the many standards, codes or principles to report against. The comment was made that many financiers “don’t know what they don’t know”.

Focusing question: *Should the JORC and VALMIN Codes be prescriptive about ESG related matters, or should this detail be provided in supporting guidance documents (prepared/ updated outside of the Codes)?*

Discussion: There was mixed feedback, with general recognition that ESG matters and while already noted to some extent in the Codes, it requires more emphasis. Most participants seemed to consider the Codes should remain higher level and principles based, supported by guidance (as Modifying Factors) including for ESG to be considered, and with further details on ESG to be provided in other guidelines (which can be updated as required more frequently than the Codes).

ESG matters are dynamic and need to be considered in project advancement. There was discussion around which point of a project’s advancement more robust ESG related attention required, with some saying it is not needed at the exploration stage. Others observed that a huge amount of damage can be done at this stage which adversely affects future project development. It was noted that current land access rules in Western Australia and Queensland have early exploration tenement access requirements, so on this basis early attention to ESG matters in these states is required.

Focusing question: *How should the matter of Competent Person/s sign-off be handled in reporting exploration results and targets and the evaluation of mineral deposit economic viability? e.g. should individual Competent Persons on ESG related matters report individually or via a single lead Competent Person?*

Discussion: Overall feedback was supportive for multiple competent person sign-off where the complexity or project advancement stage requires this, and that an ESG competent person may be required as part of this multidisciplinary sign-off. The current situation effectively regards a person as an “expert” because they believe themselves to be - this is outdated. Some views were expressed that “experts” signing off on Modifying Factors should be Chartered Professionals or equivalent (such as Registered Professionals in the AIG). There is the question of overarching competent person sign off with multiple experts providing input for complex projects.

Focusing question: *What (more) does AusIMM need to do to advance the response of the resources sector to ESG related expectations and professional social responsibility pertaining to investors, lenders and shareholders?*

Discussion: General feedback was that AusIMM is already doing much in this space, with additional observations and ideas as captured below.

Breakout 3: Key points

- Culturally the sector needs to consider ESG as it does safety and embed this thinking/culture in how AusIMM members operate and contribute to projects.
- AusIMM could consider contributing ideas to the regulatory space if approached to do so. This would be on a case-by-case basis. AusIMM should continue its engagement with kindred bodies, industry representative bodies such as the International Council on Mining and Metals (ICMM), Minerals Council of Australia (MCA) and the Queensland Resources Council (QRC), and universities/ tertiary institutions to ensure learning is aligned. Also, investment bodies aligned to the UN Principles of Responsible Investment should be engaged.
- AusIMM should continue to deliver and enhance ESG related matters in its training/ guideline courses, the ESG Professional Certificate course and its ESG Social Responsibility framework.
- AusIMM should continuing work to build trust amongst key stakeholder groups in the community, including secondary and tertiary students and their key influencers.
- AusIMM might consider mechanisms for endorsing the competency of independent reviewers working in the ESG space, as appropriate having regard to AusIMM’s Royal Charter.

Breakout 4 – Workforce

Focusing question: Do we have a good understanding of supply/demand/recruitment when it comes to ESG and how might we address any gaps?

Discussion: We have a poor understanding. Supply and demand are very difficult to define – for instance there are many relevant disciplines in different areas of the social sciences that are not specific to the resources sector. More work is required on curriculum to include social performance and responsibility - going back to basics in many cases. Balance between specialists and generalists is needed.

Over the past few decades, the minerals sector has lost sight of deep subject matter expertise and on-the-job training. More emphasis is needed in equipping ESG related professionals to feel empowered to voice concerns or views to management and to be involved in decision making. Companies are not demanding ESG related skills as much as they should and don't understand where to find ESG competent people. ESG related demand may be underestimated purely by a lack of recognition of need and should be included in the recruitment toolkit.

Focusing question: Is the current AusIMM framework of Awareness, Understanding and Competence helpful and where should the focus be in the next two years?

Discussion: It is a good start but needs to be better coordinated. For those who are not ESG related professionals, focus does need to move from 'awareness' to understanding' and to some degree 'competency'. Students are unaware of the options and challenges within ESG to find time to fit additional units into a mining technically oriented undergraduate degree, and universities are slow to change. Micro-credentialling is one option.

Focusing question: Would refinement of the competency definitions across Chartered Professional disciplines help clarify the experience necessary of Competent Persons under the JORC Code as well as of Verification Service Providers (VSPs) under the Towards Sustainable Mining (TSM) framework?

Discussion: The nature of ESG related risks will dictate what competencies are needed for specific projects. An expert can be very competent in one or more areas, but not in others. For instance, there is both breadth and nuanced detail in the AusIMM Social Performance Areas of Practice competency set.

Focusing question: How important is ongoing due diligence and auditing to ensure commitments that have been made in relation to ESG don't drop off once the finance is secured?

Discussion: It is important to reflect on history – there has been a shift from "captains of the mining industry" to business leaders running minerals companies who have never previously worked in the minerals sector. Due diligence needs to focus on the intent of promises and commitments made and must be constantly updated. There needs to be an implicit contract and strident language in the ESG space, with professionals needing to be armed to have weightier conversations than their job title perhaps implies. The greatest force for change will be from the financial institutions holding the companies to account. Civil society has a say, but money speaks louder than good intentions.

Focusing question: What (more) can AusIMM do to help improve the understanding and upskilling of mining sector professionals in relation to ESG?

Further to the contributions recorded above, the discussion here is reflected in the key takeaways for the session outlined below.

Breakout 4: Key points

Key reflections, options and feedback are captured below.

- There is no "tailings degree" currently being offered in Australia, although some aspects are covered in Metallurgy and Geotechnical – AusIMM could fill gap with courses and assessments.
- AusIMM should highlight opportunities for people joining the resources sector to contribute to the 'green economy' via future workforce roadshows involving universities.
- AusIMM can help develop an 'ESG capability' pipeline by encouraging the development and competency assessment of technical and ESG related practitioners, leading to Chartered Professional recognition.
- AusIMM should further expand on its professional development offering, as related to ESG performance.
- AusIMM website lists a range of degrees that have course recognition for each specialist society, but there are none specifically for social performance in the resources sector.

- AusIMM could offer ESG related governance training to boards and senior managers to move them from awareness to understanding, including that they need to seek professional assistance for competent person sign-off.
- AusIMM competencies as defined are broad enough that they cover all areas, but the assessment and/or validation side requires further development.
- There needs to be formalisation of finance contract delivery and performance measures to ensure ESG related commitments are signed-off as completed, or if in progress that there is a system in place to track progress.
- The current range of professional disciplines required to meet post closure land use objectives may need to be supplemented with professionals from parallel sectors. This should be addressed by identifying the overlaps which need to be filled, such as landscape and infrastructure planning and design, agronomy, silviculture and others.



Day two plenary panel

Day two opened with a plenary panel featuring industry leaders Stephen McIntosh, Tim Gerrard and Jill Terry.

Prompted by a question about what changes he has observed over his 35-year career, Steve McIntosh described his early experiences as an exploration geologist in PNG.

Steve noted whilst social and community expectations were not what they are today, the real-world complexity on the ground gave deep insights into the broad dos and don'ts of effective community engagement. He shared his subsequent career experiences across a wide range of geographies and roles occurred against a steadily evolving and escalating set of expectations of environmental and social performance. Whilst ESG first emerged a decade ago and has gained global prominence in the past three years, it has been steadily building upon an evolving set of issues and foundations for three decades or more.

Tim Gerrard described how ESG is more than just another acronym, that he and his fellow analysts are now using it to scrutinize executive and resource businesses' ability to manage for consistent returns. The renewal energy and technology transition under way is going to prove difficult for many businesses, but minerals companies with an eye to new materials and an ability to achieve societal support are going to gain competitive advantage.

Jill Terry described the work currently underway to upgrade the JORC Code, last published in 2012. The high-profile ESG workstream has engaged a global and diverse group of experts representing investment, technical, regulatory and corporate stakeholders. Comparisons with reviews of ESG considerations in similar codes around in the world suggest JORC and its parent bodies, including the AusIMM, are learning, collaborating and advancing ahead of most others. ESG competent person guidance, transparency, consent and competence criteria have received particular focus.

Day two breakout sessions

Mine life stages

Topics for the day two breakout groups were:

- Exploration and Resource/Reserve Definition
- Mining Approach
- Mineral Processing and Waste Management
- Mine Closure Planning, Transition and Re-purposing.

As with Day One, each breakout group was presented with some key focussing questions and report back was provided to the plenary by the facilitators.

Breakout 5 – Exploration and resource/reserve definition

Focusing question: *At what stage should ESG and social responsibility considerations 'kick in' and at what stage should they be reflected in JORC and VALMIN Code reporting requirements?*

Discussion: The commonly expressed view was that consideration of ESG should start in the (desktop) planning phase and needs to be proportional to context of the possible project. There was much discussion about the need for early community engagement:

- Example from New Zealand – AusIMM invites Maori leaders to speak at its events and one said that companies should come and discuss what Maori want, not what the company wants - "Talk to us even if you don't have a project".
- An alternative view expressed was that there is not much point talking to community groups until a project has been defined.
- It was observed that trust is essential. Affected communities need to feel that the company has local people's interests at heart.
- One suggestion was that once exploration results indicate that there is a high probability (eg 70%) of minable reserves being established, face to face information exchange should be entered into to determine at a qualitative level what local issues are important to potentially affected landholders (e.g. geographic features, vegetation, soil types and conditions, water resources, cultural and heritage, etc).
- Companies often don't talk to potentially affected people because they don't know exactly what will be developed, or some information is confidential.
- It is essential that all professionals have the skills and confidence to get the balance right - there are skills and systems that can be propagated in this regard.

Focusing question: *Do minerals sector professionals have a sufficient understanding and, where relevant, competence to consider ESG related matters when prioritising geological targets and when determining resources and reserves?*

Discussion: While government have set regulatory requirements, which explorers must meet, AusIMM has provided further guidance on professional standards through the Social Responsibility Framework. Publications such as the "Life of Mine Perspective" (Spectrum 24) and "Mine Managers Handbook" (Monograph 34) provide less direct guidance.

It would be beneficial to provide more specific guidance for AusIMM members to learn about leading practice. For instance, most geologists appear to be still driven by the technical aspect of their work with little consideration of ESG related elements of project viability. Knowledge of the AusIMM Social Responsibility Framework and the associated awareness, understanding and competency levels can be improved.

There was discussion about misconceptions of when and how to approach community engagement; examples being:

- Remote flyovers (drone aerial) might seem 'harmless' to geologists but can be offensive to communities.
- Approaches can be ad hoc, or rely too strongly on 'friendly' relationships between individuals and not on a formal, institutional basis, hence might exclude key community groups
- The need for informed social science professionals who understand how to interact and bring out the actual underlying concerns of community groups.

Focusing question: *Would detailed 'project study guidelines' help guide progression through exploration, feasibility and optimisation studies?*

Discussion: Major companies have codified rules and guidelines that must be followed. Mid tier companies have some rules and guidelines, but they can change. Juniors often seek expertise. How you use Project Study Guidelines (PSG) is as important as having them. PSG should focus on the identification of "fatal flaws". Live time ESG risk assessment should be integral to studies and any identified "show-stoppers" should prevent projects progressing through 'gates' to levels of higher spending before these are mitigated. There need to be some "not-negotiables" that every project needs to focus on, rather than describing explicit steps that must be done in a particular way.

There is a difference between confidence and being competent. Need to dig into the basis of whether someone is competent in the area upon which they are being asked to advise. A warning was expressed that codification can have the effect of making work very transactional, hence disempowering people in an organisation. This is the opposite of competence. There is a need to grow genuine Level 1 Awareness and Level 2 Understanding into the overall assessments of resource development.

Focusing question 4: *What (more) does AusIMM need to do when it comes to exploration and resource/reserve definition?*

Further to the contributions recorded above, the discussion here is reflected in the key takeaways for the session outlined below.

Breakout 5: Key points

Key reflections, options and feedback are captured below.

- AusIMM could work towards developing optimised guidelines for projects studies, enabling those companies and minerals professionals who need support to find it.
- AusIMM could offer short courses and/or speakers to universities to engage with geology students as part of their studies to help them understand ESG related issues that they may face.
- AusIMM should increase collaboration with kindred societies (e.g. AIG) as part of a sector wide approach to improving ESG related performance.
- Integrate ESG related matters into existing AusIMM courses and tools that are already being delivered (e.g. cost estimating course).
- Consider an AusIMM monograph on ESG related matters.
- AusIMM should engage with minerals company leaders and board members who do not have direct minerals related professional expertise.
- AusIMM could host ESG 'Teach-ins' (2-3 hour condensed interactive sessions) for groups of board members and C-suite executives.

Breakout 6 – Mining approach

Focusing question: *What importance do ESG and social responsibility principles have in determining project feasibility, mine planning, scheduling and design?*

Discussion: ESG has historically not been front and centre in minerals project planning and this should change as it fundamentally impacts cost and time to gain approvals. It was noted, for instance, that project plans that directly incorporate ESG performance factors improve financial, social and economic outcomes for all parties. Planning for closure early is a key to addressing potential impacts on affected communities and assists in getting approvals from regulators with a reduced bond. The focus needs to be on getting professionals on the ground early in the project lifecycle engaged in thinking through ESG aspects with the help of specialists.

Focusing question: *Which approach should take precedence in mine design and operations - risk/materiality priority based OR conformance with regulatory requirements and global standards?*

Discussion: The regulatory approach does not necessarily avoid community outrage. Design and operation of a mine needs to consider and engage affected communities. Regulatory factors are often behind forward thinking and inclusive work on the ground. Companies need to include ESG thinking at higher than minimum regulatory standards level. This requires education of operators to look beyond the regulatory minimum. Thinking needs to be reframed to move from "do no harm" to "benefit to communities" and needs to incorporate as far as possible the knowledge derived from information exchange with potentially affected landholder/custodians about issues of concern to them as to land use changes at and around the asset site.

Focusing question: *How can social responsibility requirements best be incorporated into the professional disciplines that contribute to mine planning, design, implementation and operations management?*

Discussion: Historically in mining engineering courses there has been very little attention to ESG related matters, but it should be part of the curriculum going forward. It is an important consideration and should be in the conversation earlier in the process. It could be piggy backed onto technically oriented ESG issues such as decarbonisation. It does feel as though we are going "around the mulberry bush" again - when introducing environmental standards forty years ago we had to educate other minerals professionals.

Everyone should recognise they have a responsibility. Student awareness on ESG related matters should be integrated into education programs.

Focusing question: *What (more) does AusIMM need to do to advance the response of the resources sector to ESG expectations and professional social responsibility during mine planning, design and operation.*

Discussion: A small proportion of Chartered Professional development needs to be dedicated to ESG matters. All professional disciplines need some knowledge or awareness of the other disciplines and general knowledge on societal expectations. There is a gap in governance and a need to shift from exclusively cashflow considerations to asking more about ESG matters. It is questionable whether small and medium sized company boards have the capacity to ask ESG related questions? They need to be upskilled in some cases.

Breakout 6: Key points

- Develop a guidance for professionals working in the project design/studies phase to incorporate community engagement and ESG related matters in the standards that need to be met.
- There is a governance gap in boards which might be remedied by AusIMM discussing with key professional bodies (AICD, AIM, etc. how to introduce and expand ESG matters and JORC into their curriculum.
- Guidance is needed for operators and studies leads to go beyond regulatory minima to take account of emerging societal expectations, which change over time. Planning and permitting needs to consider this at the front end, rather than playing catch up.
- ESG and social responsibility should be built into broad minerals professional education, including for finance, human resources and communications professionals coming into the minerals sector.
- AusIMM can use the mechanism of the Chartered Professional program to improve ESG related understanding. ESG could be included in Professional Development requirements appropriate to the discipline.
- ESG needs to be approached like safety which is embedded into today's minerals sector culture. At present typically only one out of 16 units covered has components of ESG. Graduate programs typically have more environmental references; this could be extended to ESG matters overall.



Breakout 7 – Mineral processing and waste management

Focussing question: *How should we factor in ESG considerations when designing and operating mineral processing plants?*

Discussion: Closure and post-mining land use must be brought into the conversation early and include the whole value chain – waste should be an afterthought. The sector needs to stop recreating the same or similar mines with large uncharacterised waste excesses frequently sterilising opportunities for productive materials usages of benefit to society and the environment long term. Further, a better understanding of what can be flexed into the production space to utilise renewable energy sources is required. Processing plants should be modular so they can be relocated and re-used. The sector needs a mindset of looking for value in waste (thinking of it as an asset) to avoid sterilising potentially valuable materials

Early engagement is needed with local stakeholders to help improve understanding and facility design and to create greater awareness about the final intended plan. Improved efficiency in operations can balance cost and benefit. Investors need to be considered. For example early ore sorting can involve expensive upfront capital. It may be easier to fund this later, but it is difficult to retrofit, and inefficient over the long term. Ongoing research is needed into 'exotic' or complex locations, and the mining sector could learn from other sectors.

Focusing question: *Does the current ICMM Global Industry Standard on Tailings Management (GISTM) meet the ESG and social responsibility expectations we would have for AusIMM Members?*

Discussion: The GISTM is a valuable start, but follow-through is required in relation to auditing and assurance. More considerations of dry tailings solutions (especially in arid environments) is required, and this should include the use of rocks for non mine construction purposes. Finally, the GISTM says little about long term issues of contamination such as that arise from soil forming processes, erosive deflation, subsidence due to consolidation and releases via kinetic dispersion and molecular diffusion.

Implementation of tailings review boards (with multi-disciplinary makeup) is particularly important. It is not clear that non-industry people understand the risks associated with minerals operations to ask the right questions: is this a risk if it causes investors to make noises about trivial matters? There are many site specific matters that need expert consideration, such as tailings mineralogy and reactivity, acid mine drainage, dust generation, value of water recovered, geotechnical stability, etc.

Focusing question: *What are practical examples of technology and innovation being used to optimise ESG expectations?*

Discussion: It is becoming more common to have digital sensors and advanced instrumentation around plant and digital twins, etc. The next phase is live emissions dashboards embedded into operations. Too many sensors lead to inefficiencies, so data discipline is important. Technology and innovation are important but understanding the fundamentals is essential to success. Better use is needed of novel pre-concentration/ore sorting techniques and reduction of water and energy consumption through alternative milling eg. Vertical Roller Mills (VRMs).

Overall, there is a lack of comprehensive disturbed (aka waste) material characterisation for uses other than mineral processing. It would be beneficial if management KPIs took potential ESG related gains from technical innovation into account.

Focusing question: *What more does AusIMM need to do to embed ESG best practice into plant design?*

Further to the contributions recorded above, the discussion here is reflected in the key takeaways for the session outlined below.

Breakout 7: Key points

Key reflections, options and feedback are captured below.

- AusIMM should host more conferences and professional development activities (including roadshows) in areas like preconcentration, post-mining land use and how to access finance for low energy/carbon footprint projects.
- There is a role for the AusIMM to educate investors and to assist boards in finding metrics to justify additional costs and prove there is value to wider society as well as investors and lenders.
- AusIMM could play a bigger role in educating investors and boards on tailings and waste management in line with the ICMM Standard.
- AusIMM could help get more technical people on minerals sector related boards through education and awareness, maybe a joint initiative with AICD or similar on governance to assist technical professionals in gaining board readiness skills and competencies.
- AusIMM could host roadshows highlighting the Social Responsibility Framework, including the Chartered Professional program.



Breakout 8 – Mine closure and rehabilitation

Focusing question: *What is the best way to ensure mine closure and PMLU (post mining land use) are prioritised as early as possible in the LOM (life of mine) cycle (e.g. incorporation in design phase, imposing closure bonds, tighter regulation or other mechanisms)?*

Participants commented that people rarely turn their mind to closure when projects are at exploration stage, whether they are community members, landholders and/or traditional custodians. Some contributors noted planning for closure 'as early as possible' is important and noted that some projects do set out PMLU options early.

There can be a significant challenge if community/traditional owner expectations change over the life of a mine. Although early agreement on closure outcomes at project initiation appears beneficial, there also needs to be scope to adjust to changing expectations (and technical possibilities) over time. Regulatory requirements for PLMU plans at the approvals stage might need to be revised over the life of a mine (with community engagement at each stage gate).

Governments have always had financial assurance frameworks to deal with rehabilitation and closure costs where mines are abandoned or discontinued, but these have seldom proven sufficient where the operator proves not to have the financial resilience to deliver on rehabilitation commitments. This has been particularly the case where sale of assets to new parties occurs late in the projected life of mining operations.

In NZ the law says the land must be returned to the same or better condition, and depending on the history of the operator, they have to present annually to the regulator to demonstrate capacity to do this. In Australia, the federated regulatory structure adds complexity. In all jurisdictions, understanding what affected communities want for a long-dated outcome is a very delicate area of interaction. Such regulatory requirements have an advantage in that where the surrounding land use productivity is high, investment in achieving higher value land uses can represent substantial value for money invested on its own merit. This is especially so where funds for post-closure investment as a statutory requirement have been accumulated as a cost of operations from the outset.

Focusing question: *What role does technology and innovation play in optimising planning for mine closure and re-purposing?*

Communities need to understand what minerals companies are able to achieve that might be of mutual benefit. Participants cited many examples of innovative rehabilitation. Sometimes there are concerns about whether land can actually accommodate the PLMU (e.g. a different industrial purpose, football fields, golf courses or water parks).

Ideas might come from industry, community members or government. AusIMM and other organisations can play a significant role in championing the opportunities and potential for PMLU at a 'high level' (e.g. information sharing). AusIMM could advocate for community benefits through communicating best practice.

However, innovations can also come at a significant cost and are almost invariably more expensive than established practices, which is one reason capturing ideas and potential PMLU early in mine life is important. Conventionally, rehabilitation has focussed on downside risk, rather than opportunity. It is also critical to manage community expectations (particularly where rehabilitation options have changed). There can be conflicting community views, for instance some community groups indicate they value visual amenity and biodiversity, others might want commercial activity, and it has to be noted that feedback often depends on how questions are asked. An approach to managing community expectations being considered in Canada involves progressive transfer of ownership of the PMLU opportunities to the local community where they are willing.

Focusing question: *Is mine closure, transition and re-purposing largely a matter of environmental remediation and landscape rehabilitation or should/can we achieve better results by anchoring this on social and governance matters?*

The sector may not have much choice soon – in the face of onerous ESG-related risks and mitigation costs, stock market investors are withdrawing and private equity lenders are seeking long term detailed plans with ESG-related mitigations fully costed. Without good rehabilitation plans and other ESG matters fully factored into long term planning, responsible investors will decline to invest. These issues relate more to company governance than environment per se.

Dependent upon the value of land and the opportunities available and feasible at and around a mine site, rehabilitation and repurposing the site for non-mining purposes could be best viewed as opportunities worthy of investment in their own right. Governance is then required to ensure that considered options are feasible for investors when assessed against ESG principles and practices including responsible resource disbursements in the long term. Many such examples of this sort of investment exist.

Novel repurposing of former mining leases should be given greater attention in post closure vision setting.

Examples include creating mining heritage and geotourism destinations, waste management and renewable energy installations.

Breakout 8: Key points

- ESG and PLMU professional guidance and training is required to address the shortfall in closure-related training and knowledge sharing. (Universities are not including mine closure content in their course offerings). AusIMM should step into this space and engage with complementary disciplines to expand interactive roles in achieving productive post mining land uses which include as far as is practicable the knowledge of site resources and the value of such infrastructure as can be repurposed to support future land use.
- A significant amount of valuable data and experience is available from other industries which can guide the early inclusion of disturbed material mapping and characterisations sufficient to determine the segregation of stockpiles of material having beneficial characteristics for different applications (e.g. construction materials, acid mine drainage mitigation, contaminant mitigation, developing soil and drainage components, rock armouring against erosional deflation, capillary break layers, fertility enhancement, etc.
- AusIMM and similar organisations need to put forward mine closure training requirements and lobby government to invest. Companies need to be willing to put more resources into this as well.
- AusIMM could organise mine closure forums and training, and proactively work with universities to offer member professionals as tutors and content deliverers.
- AusIMM should look to engage with other professional institutes, such as those representing civil engineering, agricultural science, infrastructure planning etc., to run joint courses on mine closure and PMLU.
- AusIMM should continue to profile beneficial, novel repurposing of former mining sites to support professionals in assessing opportunities for post closure site use.

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Additional reading

The following list of additional reading was provided to participants as a follow up reading 'resource'.

- [AusIMM Social Responsibility Framework and Statement](#)
- [AusIMM - ESG and social responsibility standards and principles: a guide for AusIMM Members.](#)
- AusIMM - A Guide to AusIMM Member' Obligations Under the Code of Ethics and The Associated Complaints Process Code of Ethics Revised 2018
- AusIMM – LIFE OF MINE PERSPECTIVES; SPECTRUM 24;2018
- AusIMM – MINE MANAGERS HANDBOOK; Monograph 26; 2012
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