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Dear Secretary

Please accept this as a submission to the Senate Inquiry into Rehabilitation of Mining and Resource Projects as it relates to Commonwealth responsibilities.

Firstly, The Lock the Gate Alliance welcomes the establishment of this Inquiry given the extremely poor track record of the mining industry, weak regulation and the resultant financial and environmental liabilities that continue to accrue across all jurisdictions. Similarly we welcome the opportunity to make this submission and hope we can engage directly with the Inquiry in regards to the matters detailed below.

The Commonwealth has a crucial role only it can perform in regards to assessing the overall mine rehabilitation situation nationally from a financial, social and environmental perspective. In addition the Commonwealth does have certain specific powers and areas of responsibility that, if exercised, can have a material influence on how the states and territories deal more effectively with mine rehabilitation. The Commonwealth has a potentially significant role in driving improved mine rehabilitation outcomes across the jurisdictions.

Historically issues relating to abandoned mines and mine rehabilitation have not figured prominently in the on-going environment and mining debate. This is odd given mine rehabilitation and the long-term residual impacts of mining is the biggest single indicator of the industry's commitment to sustainable development and a measure of its social licence.

On any measure of performance in Australia, the mining industry has failed to deliver on its own commitments and the expectations of the Australia people in regards to best practice mine site rehabilitation. In failing to do so the industry has ignored its own business case and is eroding its own social licence to operate.

By acting on mine rehabilitation the Commonwealth Government can deliver much-needed environmental outcomes whilst at the same time delivering substantial new jobs in regional Australia.

Recommendations

(Details of these recommendations contained in the body of this submission)

Establish a Commonwealth Environmental Protection Authority (EPA)

The Lock the Gate Alliance suggested reforms outlined below can be implemented separately or could be managed and facilitated under a Commonwealth Environmental Protection Agency. We believe the establishment of such an Authority is long overdue and would ensure a nationally consistent and coordinated approach to a range of issues related to the management, regulation and protection of Australia's biodiverse and resource-rich environment.

We believe the reform of Australia's approach to mine closure and rehabilitation would be best achieved through the establishment of a Commonwealth EPA. The EPA would have direct carriage of EPBC conditioning, national standards and potentially incorporate the proposed National Abandoned Mines Commission within its structure. The EPA could also drive and facilitate the other recommendations – the review of State and Territory mine rehabilitation liabilities, asset transfers and financial reporting - in partnership with other Commonwealth Agencies.

It is in this context that we recommend the Inquiry consider and support the establishment of a Commonwealth Environmental Protection Authority as the most effective mechanism to achieve the reforms recommended below.

Asset Transfers: We believe the Commonwealth should explore mechanisms to ensure that the financial and technical capacity of purchasers to deliver their rehabilitation responsibilities could be tested and vetted to protect the public interest. This could be achieved under the ASIC Act – where an additional public interest test could be applied covering closure and rehabilitation liabilities and the buyers technical and financial capacity to meet there liabilities.

Financial Reporting: We recommend mandatory disclosure of the following items;

- Timeframe to closure for each mine asset;
- Total estimated cost of closure for each;
- The mine closure risk assessment for each asset;
- The rehabilitation bonds and financial assurance held as an offset;
- Investment to date in progressive rehabilitation

For ASX listed companies, changes could be made to ASX listing rules, however, given the public interest aspect that would apply to both private and public companies, it is preferable that changes are made to the *Corporations Act* to ensure wide coverage of mining and resource companies.

EPBC conditioning for mines impacting on Matters of National Environmental Significance (MNES).

To ensure that approved mines have the lowest possible impact on MNES, rehabilitation related conditions must be applied to these projects through the EPBC Act. This includes;

- The proponent must submit a full life of mine and closure plan at the approvals stage which includes rehabilitation strategies designed to specifically protect at risk MNES,
- The proponent must submit a progressive rehabilitation plan including rehabilitation targets designed to enhance the protection of the at risk MNES during the mine's operational life
- The Commonwealth should require an independent assessment of the closure cost estimate based on the closure plan that informs the relevant jurisdictions level of FA with specific reference to protecting the MNES,
- The final landform and land use must reflect the lowest possible residual impact on the at risk MNES and mandate that voids are backfilled and out of pit waste rock dumps and tailings storage facilities are eliminated where these landforms have a demonstrable residual impact on MNES.

The rehabilitation of ERA's Ranger Uranium Mine, although not without its issues, sets a useful precedent in regards to protecting MNES (the Kakadu World Heritage Area) through improved planning for closure, community consultation, as well as the back filling voids and the elimination of tailings storage facilities and waste rock dumps.

Abandoned Mines: The Commonwealth could national demonstrate leadership on the abandoned mines issue through the establishment of a National Abandoned Mines Commission loosely based on Canada's National Orphaned Abandoned Mine Initiative (NOAMI). This Commission would be charged with furthering the implementation of the Strategic Framework for Managing Abandoned Mines in the Minerals Industry through SCER (Standing Committee on Energy and Resources) under COAG (Coalition of Australian Governments).

National Standards: We strongly recommend that the Commonwealth commits to working with the state and territories to develop a set of national standards covering the following six issues:

- Adequacy of financial assurances
- A final land form and land use policies
- Adequacy of legal requirements requiring progressive rehabilitation and best practice mine closure planning
- Closing loopholes that allow indefinite 'care and maintenance'
- Assessment regimes around sale of aging mine assets to minnows
- Adequacy of monitoring and enforcement regimes including strong legal penalties for non-compliance
- Investigation of state and territory mine rehabilitation strategic plans designed to deliver a coordinated approach that maximizes local employment and minimizes long-term environmental legacies

Review by the Federal Treasury into State and Territory liabilities.

Given the extent of exposure of taxpayers and state and territory treasuries and balance sheets to the combination of abandoned mines liabilities and inadequate financial, we believe there is a legitimate role for the Commonwealth Treasury to undertake;

1. An assessment of the overall financial liability stemming from both abandoned and operating mines under the various state schemes
2. The risk these liabilities pose to state and territory treasuries and balance sheets, and
3. The identification of remedies and risk mitigation strategies through policy, programme and legislative reform

Context – Current Industry Performance

There are over 50,000 abandoned mines across Australia. While many are small and arguably have a limited environmental impact, a significant number are large to very large and have material environmental impacts. Queensland now has some 15,300¹ registered abandoned mines of which 120 to 130 are classified as medium size but most likely to have impactful infrastructure such as tailings dams and waste rock dumps, and 317 are designated as large, very large and giant².

The cost of repairing these abandoned mines currently falls on the Queensland taxpayer. The Queensland Auditor General estimated cost of their rehabilitation in excess of \$1 billion³. Given the cost of closing and rehabilitating large mines regularly exceeds \$500 million, \$1 billion would seem to be a gross underestimate.

A Lock the Gate Report “Abandoned Mines in Queensland - Toxic Time-Bomb or Employment Opportunity?” found that up to 6000 direct and indirect jobs could be created in regional and remote Queensland if the Queensland Government changed the funding model for addressing abandoned mines issue by converting the current FA system from being bank guarantee based one based of cash deposits.⁴ A full copy of the report is attached in Appendix A.

The number of abandoned mines in Queensland and elsewhere continues to grow. This is a key indicator of both recalcitrant industry behavior and inadequate regulation. This is one key area where the Commonwealth has the potential to make a significant positive intervention (see below).

Beyond the historical situation, The Australia Institute’s analysis “The Darkside of the Boom” reveals that the mining industry and its regulators continue to fail to deliver on the Industry’s commitments and the protection of the public’s interest respectively.

According to the Australia Institute analysis ;

“relinquishments of mine sites that are fully rehabilitated and suitable for alternative further use are extremely rare. No examples or statistics could be found of relinquishment of major mine sites in the big

¹ Statement by Mr Oscar Kadletz, Abandoned Mines Coordinator, Dept. Natural Resources and Mines to the Queensland Floods Commission of Inquiry, October 24th, 2011.

² Queensland Floods Commission of Inquiry, Ch 13, p374

³ Queensland Auditor General, 2014

⁴ ABANDONED MINES IN QUEENSLAND - Toxic Time-Bomb or Employment Opportunity? Lock the Gate, October 2016

mining states of Western Australia or Queensland. One relatively small underground coal mine has been relinquished in NSW and an old sand quarry is now a botanical garden near Melbourne in Victoria. South Australia has 18 mines listed as rehabilitated, although only 14 are mineral mines. Eight of those were barite mines; of the remaining six, most are from the 19th Century and one is only “partially rehabilitated”.⁵

In short, there have been no successful relinquishments of any mine of any significance in any jurisdiction in the last 25 years. This is significant given relinquishment of rehabilitated mines remains the ultimate goal of both the regulators and the industry and is the key measure of the industry’s environmental credibility. Essentially relinquishment occurs when the closure and rehabilitation of the mine is deemed to be completed and the residual risk of the rehabilitated site is deemed to be of an acceptable level as to justify the lease holder being relieved of any on-going liabilities related to those rehabilitation works.

The Australia Institute study (see Appendix B) and the situation with abandoned mines illustrates that across all jurisdictions the mining industry and the regulators have failed to deliver on the letter, spirit and intent of State and Territory legislation and regulation as well as the industry’s public commitments to sustainable development.

This historical and on-going situation warrants, if not demands, Commonwealth intervention.

Financial Liabilities

Abandoned mines and poor mine rehabilitation performance expose the Australian tax payer to potentially massive liabilities.

Beyond the billions of dollars in liabilities accruing from Australia’s 50,000 abandoned mines, current operating mines also pose a financial liability. This is because State and territory Governments consistently undervalue the extent of their exposure to existing liabilities which is manifest in the consistent under-estimation of the amount of financial assurance (FA) required to offset the failure of existing mining operations to adequately fulfill their legal rehabilitation obligations.

Examples of this can be found in QLD, Victoria and WA. The situation is likely to be the same in other jurisdictions and this is one area where the Commonwealth should take an active interest given the level of liability and the implications for state and territory budgets.

In 2016 a leaked Queensland Department of Environment and Heritage Protection (EHP) report, the Targeted Compliance Programme Report on Financial Assurance for Queensland Coal Mines (TCP Report) illustrated the extent of the QLD Government’s financial exposure to inadequate FA in the State’s coal sector.

The internal report was commissioned to test the sufficiency of FA held against the rehabilitation liability of QLD coal mines. The FA was examined in detail for 15 Queensland coal mines being 28% of coal mines in the State. In summary the Report found;

⁵ The Australia Institute Dark side of the Boom - What we do and don’t know about mines, closures and rehabilitation, August 2016

1. The amount of FA held for the 15 mines sampled is insufficient to complete rehabilitation at these sites. The estimates deficit is \$839.8 million.
2. The TCP extrapolated this amount and found that the FA held for the coal industry in QLD is currently in deficit to tune of \$3.24 billion
3. The coal industry's footprint is now estimated to be 190,000 hectares of disturbed land and increasing
4. To date only 22.5% of coal mine disturbance has been subject to some type of "preliminary" rehabilitation down from 28% in 2006 and is on a downward trajectory
5. Only 507 ha or 0.003% of the total area disturbed by coal mining has been fully rehabilitated⁶

It should be noted that the TCP Report's figure of \$3.24 billion under-estimates the size of the problem as it does not include base metal mines, bauxite, gold, mineral sands or other operations. Further the extent of the deficit/ industry subsidy is based on the assumption that the State's and the industry's preferred final landform – permitting companies to leave the least expensive but highest impact outcome including large final voids and out of pit waste dumps as opposed to backfilling - is an acceptable outcome. Polling (see below) suggests that this is not the case - reinforcing the widely held view that the \$3.24 billion for coal alone is a significant under-estimation of the liability. The TCP Report is attached in Appendix C.

The belief that this number under-estimates the liability is further supported by an analysis of the Queensland Government FA Calculator. A Lock the Gate analysis (see appendix D) reviewed the Queensland financial assurance calculator and benchmarked it against industry best practice closure cost estimation. The review found that the Queensland FA calculator has a number of significant flaws including;

- No independent verification of the measurement of disturbed area
- No 'basis of estimate' to provide transparency for the rates and values in the calculator
- Absence of a range of indirect project management costs
- No accounting for EPCM costs
- No accounting for owner's costs
- No accounting for cultural and socio-economic obligations
- An underestimation of the costs of long-term monitoring
- No accounting for contingency which is necessary to account for the level of definition for the particular closure plan

Notably, the primary focus on the "physicals" of mine site rehabilitation in the Queensland calculator and guidelines omits significant project management costs that rigorous internal mining industry calculators would include as a matter of course.

It is likely that that the addition of all these costs to the estimate may result in an increase in the level of financial assurance by as much as 100% or more in specific instances. The analysis found that the level of financial assurance fails to cover the full cost of mine rehabilitation. This finding confirms the TCP reports findings which was based on the current flawed calculator.

⁶ Targeted Compliance Programme Report on Financial Assurance for Queensland Coal Mines(TCP-009) 29 January 2016

In WA the State Government introduced the Mining Rehabilitation Fund (MRF) in 2013 which replaced the previous system of "unconditional performance bonds" which was introduced in the 1980s to ensure taxpayers were not exposed to unacceptable costs if miners failed to meet environmental requirements. When introducing the MRF the State Government retired more than \$1 billion in previously held bonds.

The MRF levy is based on the average expected cost of rehabilitation of different types of land disturbances, multiplied by the "fund contribution rate", which was set at one per cent. Land disturbance types were placed into five separate categories, each with its own unit rate. Tenement holders must report areas of disturbance against these land disturbance types. The total rehabilitation liability estimate, formed from the sum of each of these categories, is then multiplied by one per cent to determine the amount of levy owed.⁷

The MRF cannot be used until it reaches \$500 million. As of August 2016 the fund stood at \$64m⁸.

The MRF has failed to protect the interests of the West Australian taxpayer. The case of the Ellendale Diamond Mine serves to illustrate how the system has failed. The Ellendale mine called in the administrators on June 30 2015. According to the West Australian;

"liquidators have been unable to find a buyer for Ellendale with the major sale barrier being the estimated \$28 million environmental rehabilitation cost at the Kimberley mine". The liability was exacerbated by Kimberley Diamonds "failure to set aside rehabilitation money after it cashed out its \$12.1 million environmental bonds in mid-2013 after signing up to the State Government's Mining Rehabilitation Fund." Anyone interested in taking over the mining leases is likely to have to commit to site rehabilitation. If such a buyer can't be found then "it is almost certain the costs of remediating the site will be transferred to the MRF." ⁹

By comparison, and consistent with the requirements of the MRF Act, a paltry amount of just \$818,826.40 was contributed to the Mining Rehabilitation Fund with respect to the Ellendale site.¹⁰

On 4 December 2015, the CEO of the WA Department of Mines and Petroleum (DMP) declared the Ellendale site to be an abandoned site for the purposes of clause 9(1) of the MRF Act. Accordingly, the DMP is able to provide the funding to complete the on-ground works required to keep the site safe, stable and non-polluting.¹¹

The MRF is unlikely to ever cover the full liabilities of mine rehabilitation in WA because of the formula and the failure of the scheme to address the different risk profiles of different operators. One other contributing factor is that none of BHPB's or Rio Tinto's iron ore mines in WA's Pilbara region is covered by the MRF¹².

Victoria's recent Hazelwood Inquiry addressed the question of long-term environmental impacts of brown coal mining including mine closure and rehabilitation. In response the State Government

⁷ WA Mining Rehabilitation Fund Regulations 2013

⁸ Australian Mining August 3rd 2016

⁹ The West Australia, September 3rd 2015

¹⁰ <https://www.gtlaw.com.au/wa-resources-update-march-2016>

¹¹ *ibid*

¹² Pers comm; Queensland Treasury Corporation

enforced new bond requirements on the Latrobe Valley's big three coal mines designed to reflect the true cost of closure based on the operators own estimates. This translated into the following additional costs:

- The bond for AGL, which owns Loy Yang, will have to increase their bond from \$15m to \$112m by January 2017;
- The bond for Energy Australia, which owns the Yallourn mine, will rise from \$11.4m to \$68.5m; and
- The bond for Hazelwood's owners will go from \$15m to \$73.4m.³⁷

This represents a more than five-fold increase in the total from \$41.4m to \$254m. Doubts remain as to the adequacy of this increase given that none of these mines has a finalized closure and rehabilitation plan.

Victorian Premier Daniel Andrews declared: *"We've had companies for too long that have been allowed to put aside just a fraction of what it costs to keep their mines safe and what it costs to return those mine sites to the community, to whom they fundamentally belong, at the end of useful life".*¹³

Industry standards

The mining industry has developed a raft of internal standards, guidance notes and technical papers to inform its own practitioners in regards to managing mine closure and rehabilitation risks. Collectively the industry's intellectual property relating to mine closure planning, closure cost estimation, rehabilitation techniques including mitigation of key environmental risks such as acid mine drainage presents law makers with an "off the shelf" solution to most of the current regulatory inadequacies.

The International Council on Mining and Minerals (ICMM) commits its members which include all the major mining houses present in Australia, to;

"mining companies have a responsibility to work towards land rehabilitation – the return of disturbed land to a stable and productive condition. ...

As a mining operation approaches the end of its life, there should be a clear plan for transitioning from operational to closure and decommissioning and, ultimately, post-closure. Properly done, such a transition is characterised by:

- *engineering works to decommission and dismantle infrastructure, complete rehabilitation, grade landforms for effective drainage, cap and cover tailings facilities, implement post-closure monitoring networks*
- *administrative works relating to transferring assets, demobilising the labour force, relinquishing agreements, and other government and NGO agreements*
- *due diligence monitoring and reporting on the post-decommissioning status of environmental and social aspects of the site.*

¹³ Arup, T. 2016, Latrobe Valley brown coal mine bonds increased in Hazelwood fire response, The Age. <http://www.theage.com.au/victoria/latrobe-valley-brown-coal-mine-bonds-rise-dramatically-in-hazelwood-fire-response-20160415-go76u2.html> 38

Rehabilitation of the land disturbed by mining needs to not be an afterthought, only starting towards the end of an operation but should instead be a continual activity. Responsible mining companies should undertake rehabilitative actions, including remedy of environmental risks, return of disturbed land and stabilisation of creeks and drainage channels across the full lifetime of an operation.¹⁴

The ICMM has also developed a mine closure toolkit¹⁵ which is a framework to implement best practice mine closure and rehabilitation. The Minerals Council of Australia has committed the industry to ensuring mined land is returned to a usable state;

“The minerals industry recognises that while some previously mined areas are rehabilitated to pre-existing condition or better, other mined areas result in substantial transformation of the landscape. It is the minerals industry’s goal to ensure that this land is available for subsequent economic activities, conservation or community use.”¹⁶

One of the key issues is the failure of regulators to hold the industry to account in relation to its own internal policies, standards, guidelines and commitments. If regulators were to adopt and enforce the industry’s leading practice guidance on mine site rehabilitation, closure planning, progressive rehabilitation and closure cost estimation then there would probably be no need for reform or this Senate Inquiry.

A good example of regulatory failure relates to the maximization of progressive rehabilitation during the operating life of the mine. Maximising the level of progressive rehabilitation is a key risk management strategy that should be uncompromisingly regulated and enforced in the form of mandated targets, to all mining operations throughout Australia. The MCA purports to support life of mine planning and progressive rehabilitation;

“Responsible environmental management over the life of a mining operation is essential for successful rehabilitation. Companies are careful to avoid disturbing land unnecessarily and to minimise the footprint of operations. This reduces the scale and complexity of rehabilitation requirements, and lowers the cost to companies. Furthermore, rehabilitation is undertaken not only at the end of a mine’s life, but progressively during the mining process. This enables companies to meet rehabilitation obligations and minimise risk over the life of the operation¹⁷.”

Yet the performance of the industry falls well short of this rhetorical commitment;

¹⁴ <https://www.icmm.com/en-gb/society-and-the-economy/mine-closure/land-rehabilitation>

¹⁵ <https://www.icmm.com/website/publications/pdfs/310.pdf>

¹⁶ http://www.minerals.org.au/file_upload/files/resources/MCA_Stewardship_Policy_2012.pdf

¹⁷ Mine rehabilitation in the Australian minerals industry, MCA, 2016 page 4

Summary of Progressive Rehabilitation Performance

	Progressive Rehabilitation to Disturbance Ratio - FY 2015	Explanatory Notes / Source
Rio Tinto	15%	2015 Sustainable Development Report. There are contradictory figures in the 2015 report. The 15% figure is based on the performance data. In the Governance section of the same report Rio claims a figure of 26%.
BHP Billiton	28%	2015 Sustainable Development Report
Anglo American	15%	2015 Sustainable Development Report
Glencore	23%	2015 Sustainable Development Report

The Lock the Gate Alliance has developed two leading practice guidance notes for mine closure planning and closure cost estimation based on an amalgamation of internal industry guidance and advisory notes.

It should be noted that while these documents represent leading practice, mining companies rarely enforce their own standards or guidelines given the pre-eminence of maximising cashflow as opposed to long-term mine planning and planning for closure. Nonetheless they represent what should be standard industry practice if the industry was truly committed to best or leading practice.

These leading practice based summaries can inform a template for closure plans that state and territory governments should require as part of the project approvals process and in regards to financial assurance calculation. These guidance notes are attached in Appendices E and F.

Public expectations

In return for the privilege of exploiting and profiting from Australia's non-renewable mineral resources, the public rightly expects that mined land be rehabilitated to an extremely high standard. Indeed the public has accepted the mining industry's public commitment that "*land is available for subsequent economic activities, conservation or community use*" after mining ceases.

In 2016 The Australia Institute commissioned an opinion poll to gauge the Australian public's opinions in relation to mine rehabilitation (See Appendix G). The polling found the following;

77 percent of respondents said that mine sites should be fully rehabilitated, described as:

Rehabilitation close to previous natural or farming condition - pits refilled to near original surface level, groundwater protected and original types of vegetation replanted.

A further 11 percent of people said partial rehabilitation was preferable, described as:

Pits partially refilled, water pollution minimised, some revegetation of the mine surface but not to original condition.

Less than 1 percent of people felt that it was acceptable for “pits [to] remain and fill with saline or acidic groundwater, dirt and rock piles remain in a fenced off area.” The final 12 percent responded “don’t know/not sure”.¹⁸

The gap between what the industry promises and what the public expects is growing as regulators continue to ignore leading practice and approve significant numbers of very large pit voids and out of pit waste rock dumps as part of mine rehabilitation plans.

Over time this gap between public expectations and industry performance is eroding the industry’s social licence to operate. Indeed the industry seems to be ignoring its own business case for delivering leading practice rehabilitation as articulated by Rio Tinto;

“We face changing expectations around land use management and conservation that have the potential to affect the delivery of our longer-term business objectives. Restrictions on land access represent a material risk for our organisation. This increasingly makes mining and processing projects the subject of greater scrutiny by regulators, local communities, investors, non-government organisations (NGOs) and employees. The public, NGOs and regulators look to performance-based evidence to measure our real commitment to land use stewardship...”

Rio Tinto’s land management strategy puts an emphasis on will be improving rehabilitation performance. This relates to improvements both in the size of the area rehabilitated, and the quality of the rehabilitation. We are committed to restoring the land we have disturbed in accordance with leading environmental practice.”¹⁹

Final Landforms – Voids and Dumps

Regulators in all jurisdictions continue to approve plans of operations, closure plans and various licences and authorities that include huge open pit voids, out of pit waste rock dumps and capped tailings storage facilities as part of the approved final landform. This is in stark contrast to public expectations and the implicit commitment by the mining industry;

“The minerals industry recognises that while some previously mined areas are rehabilitated to pre-existing condition or better, other mined areas result in substantial transformation of the landscape. It is the minerals industry’s goal to ensure that this land is available for subsequent economic activities, conservation or community use.”²⁰

¹⁸ Public Opinion on Mine Site Rehabilitation, The Australia Institute, June 2016

¹⁹ <http://www.riotinto.com/sustainabledevelopment2012/environment/land.html>

²⁰ Mine rehabilitation in the Australian minerals industry, MCA, 2016 page 4

A final landform that includes large pit voids, out of pit waste dumps and capped tailings storage facilities represents a permanently and fundamentally altered landscape with diminished utility and value for “subsequent economic activities, conservation or community use”. Where mining involves production of acid forming materials, salts, radionuclides and other persistent non-organic pollutants, the long-term consequences of these landforms can be dire as these engineered structures fail or become compromised over time.

This also includes the water quality in these pits. In many cases the water quality in these voids will become hyper-saline and toxic over time.

This scenario is particularly relevant in metalliferous (copper, lead, silver, zinc and gold) mines and coal mining in certain regions. A case in point is the Century Zinc Mine in North-west Queensland where the final landform design of the waste rock dumps assumes their failure in the future by virtue of a surface water drainage plan that directs water flows from these structures into the un-rehabilitated pit void. This design including expensive store and release covers is considered leading practice. However it is assumed in the closure plan that the water quality of this pit will become hyper saline and toxic overtime as the pollutants become more concentrated through evaporation.²¹

The industry and its regulators do not advertise that they are approving the creation of these ruined landscapes as part of the approval and “regulation process”. In fact there is no structured public consultation process in any state that involves the local affected and broader tax paying community in any consultation or approval process regarding the final landform. It is a convention across all jurisdictions that the industry will propose the option that allows it to maximize its short-term cash flow at the expense of the long-term social, economic and environmental costs inherent in a ruined or fundamentally and permanently diminished landscape.

This again is in stark contrast to the Industry’s rhetoric. The International Council on Metals and Mining, mining’s global peak body recommends on page 17 in its “Planning for Integrated Mine Closure Toolkit” the following approach to stakeholder engagement;

²¹ Rick Humphries, pers comm MMG mine closure specialists Century Mine, 2014.

Effective closure planning involves bringing together the views, concerns, aspirations, efforts and knowledge of various internal and external stakeholders to achieve outcomes that are beneficial to the operating company and the community that hosts it. For a company, this involves:

- Incorporating closure planning into the early stages of project development (nominally pre-feasibility and feasibility) and operations;
- Collating the goals and views of various stakeholders (project owner, local community, government, and non-governmental organizations (NGOs)) at the early stage of project development and operations to inform closure and post closure goals;
- Acting to meet the goals by working with the relevant stakeholders within and outside the project owner's organization;
- Using the concepts of risk and opportunity to both minimize liability and maximize benefits to all relevant parties; and
- Using multidisciplinary expertise and multi-stakeholder processes to ensure that mitigation of risk in one area does not increase risks in another.

The process of engagement with internal and external stakeholders should be undertaken throughout the life cycle of the operation. The type of engagement may vary between life cycle phases, but engagement during the operational phase of a mine should be at an appropriate level of frequency throughout. The process of engagement may not result in full consensus on closure outcomes, but it should be considered successful if it leads to fully informed decisions.

It should be noted that the non-transparent, industry driven approach to final landform design in Australia is also eroding the industry's social licence as the public's awareness of the impacts of these behind closed door arrangements between the industry and captured regulators becomes more evident.

The most comprehensive analysis of the extent and impact of final pit voids can be found in a 2016 study, *The Hole Truth: The mess coal companies plan to leave in NSW*²² (attached in Appendix H). The report found;

- In the last five years, 36 open cut coal mines have been active in NSW. In Australia, when mines cease production their owners are not required to fill in the pit that remains. These "final voids" may be hundreds of metres deep, kilometres in length, and their impact and scale is poorly understood.
- For the first time, this report provides an audit of the total size of coal mine final voids in NSW. There are at least 45 voids with a total of 6,050ha of voids either planned or approved, covering a total area greater than all of Sydney Harbour.

²² The Hole Truth: The mess coal companies plan to leave in NSW – Energy and resource Insights, 2016

- Modern coal mines have pits that may extend 150 metres or more below the natural water table. This means water impacts are a key issue with final voids. In most cases, lakes will form in the voids. These will draw down local groundwater and take significant periods of time to fill with water, often centuries. Water quality in these final void lakes is typically poor and will worsen over time. These lakes will become increasingly saline. A scientific study estimated that one large void in the Hunter Valley may contain approximately 1 million tonnes of salt after a period of 500 years. Should these lakes overflow, the flooding of water onto surrounding land would have a detrimental impact.
- The full extent of this toxic legacy is poorly understood. Groundwater assessments for mining approvals often address final void water chemistry very poorly. In addition, there are significant variations in both the quality and nature of predictions contained in environmental impact assessments.
- Backfilling final voids can mitigate many of their social and environmental risks, and presents the opportunity to return land to a form that supports pre-mine use. In the United States, filling in coal mine final voids has been required by law since the 1970s. Yet, in Australia, this is still not the case.
- Mining companies usually present cost as a critical factor in their decision to not backfill final voids and avoid it if possible. Or point to the possibility of mining at a future date. However, retrospectively filling in voids after mining is finished is the most expensive option. If, as in the United States, a mine was planned on the basis that all voids must be filled, the associated costs would be lower.
- One responsibility of regulators is long-term custodianship for the land, yet they have allowed mining companies to leave a polluting and pockmarked landscape for future generations. Continued regulatory failure and flawed assessment processes are permitting considerable swathes of NSW to be rendered into ugly, vast, saline lakes.
- For years the NSW Government has been letting coal companies off the hook on the question of filling in the huge holes created by open cut coal mining. Now, for the first time, the scale and cost of that failure is revealed in all its ugliness. The hole truth is, we've got a big problem.

It should be pointed out that in the Central Queensland Coalfields, that state's regulators are facilitating the same outcomes as in the Hunter Valley but on a much grander scale. The extent of this future liability is yet to be documented.

The "Hole Truth" report cites legislation in the US that mandates the back filling of pit voids in order to minimise the long-term environmental, social and economic impacts of coal mining.

The Surface Mining Reclamation and Control Act (SMCRA) was passed by Federal Congress in 1977 and establishes minimum federal standards for the regulation of coal mining. Using the federal standards as a guide, each state where there is (or may be) surface coal mining may propose a state regulatory program to control mining. SMCRA requires the Secretary of the Interior to approve any state program that meets or exceeds the federal standards. This procedure allows individual states to gain primary control over the regulation of surface mining.

The federal government must establish its own program for any state that fails to submit a program, or that submits an inadequate program. All of the major coal states have received federal approval of their state programs. However, a federal program was implemented in Tennessee when citizen groups uncovered serious problems with the state's administration of surface mining controls. Today, Tennessee remains the only significant coal mining state with a federal program.

SMCRA requires that each state program contain certain performance standards with which all operators must comply. These performance standards set levels of environmental damage that are deemed unacceptable and in some cases, they actually tell the operator how a mining operation must be conducted to protect the environment. SMCRA also requires each state to adopt certain provisions to govern permitting and bonding, inspection and enforcement, and to establish procedures for designating certain lands unsuitable for mining. This chapter provides an overview of the basic requirements established by SMCRA in each of these areas. Later chapters of the handbook contain more detailed discussions of the statute.

SMCRA covers all surface coal mining operations in the United States as well as the surface effects of underground coal mining. In addition, SMCRA covers coal preparation and processing facilities, coal waste piles, and those coal-loading facilities that are located at or near a mine site. The only exceptions to the Act's coverage are for: (1) operators who produce less than 250 tons of coal per year; (2) operations that extract coal solely for a landowner's personal (noncommercial) use; (3) operations that extract coal secondarily to the extraction of other minerals (the coal may not exceed 16.6 percent of the total minerals removed); and (4) operations in which the extraction of coal is incidental to government-financed construction.

SMCRA requires the operator to restore the affected land to a condition capable of supporting the uses it could support before mining, or to "higher or better uses". The operator must also:

1. restore the approximate original contour (AOC) of the land by backfilling, grading, and compacting;
2. minimize disturbances to the hydrologic system by avoiding acid mine drainage and preventing additional contributions of suspended solids (sediments from erosion) to nearby streams and other water bodies;
3. reclaim the land as soon as practicable after the coal has been extracted, and even as the mining operation moves forward; and
4. establish a permanent vegetative cover in the affected area.²³

SMCRA was passed 40 years ago. Yet in all Australian jurisdictions the regulators continue to approve large open pit voids, hundreds of them across various landscapes, as the preferred option. The collusion between the regulators and the industry in this regard will result in a vast legacy of sites that fail the mining industry's own test of ensuring *"that this land is available for subsequent economic activities, conservation or community use"*.

Australia and Australians deserve world's best practice mine site rehabilitation and the intent of SMCRA reflects this. Any future review of coal mining in Australia or within its various jurisdictions must

²³ <https://sites.google.com/site/stripmininghandbook/a-brief-review-of-smcra>

consider SMCRA's goals as the most appropriate and beneficial for Australian tax payers and the environment. The fact is that the US coal industry continued to profit and produce coal under SMCRA rendering industry arguments in Australia that back filling voids would make the industry unprofitable null and void (no pun intended).

Employment opportunities

Improved mine rehabilitation planning and execution will extend employment at operating mines beyond "last ore" through the active rehabilitation stage and into the longer "passive" stage that includes revegetation, maintenance and monitoring through to relinquishment. This may take several decades in many instances.

Equally bringing mines out of care and maintenance into closure and rehabilitation could deliver hundreds of jobs in areas such as Central Queensland where according to the Department of Natural resources and Mines there are six open cut coal mines in care and maintenance.²⁴ Rehabilitating these mines will require a significant investment in plant, equipment and people given all these sites have low rates of progressive rehabilitation meaning the majority of these sites remain in a disturbed condition requiring significant earthworks and other physical works to complete the final landforms.

The spin offs or multiplier effects of an investment in rehabilitating mines in care and maintenance in Central Queensland and elsewhere will deliver thousands of jobs and billions of dollars worth of investment in rural and regional Australia over the decades required to rehabilitate these sites.

In regards to abandoned mines, the employment opportunities in remote Australia are even more significant. In Queensland for example we have calculated that an abandoned mines rehabilitation programme targeting the identified 317 high risk abandoned mines funded from a cash based financial assurance regime could generate several thousand direct and indirect jobs in regional and remote Queensland.

Assuming a conservative average workforce of 400 for each of these mines when they were operating and assuming 15% of the operating workforce is required to rehabilitate each mine and that at any one time there are 30 abandoned mine projects being undertaken as part of a new abandoned mines programme, then approximately 1800 direct jobs would be created. Factor in the Minerals Council of Australia's multiplier of 6.5 for indirect jobs and there are potentially 14,000 jobs to be created from an abandoned mines program (11,700 indirect jobs). Using a more conservative and perhaps more credible multiplier of 2.4 a strategic, well funded abandoned mines program could generate 4,300 indirect jobs or a total of about 6000 in rural and regional Queensland.

Within this broader opportunity, there is the potential to create hundreds of jobs in indigenous communities. The Queensland abandoned mines programme could be linked to the successful Indigenous Rangers programme whereby long-term maintenance, monitoring and management of rehabilitated mine sites could be handed over to existing and expanded regional indigenous ranger programmes.

²⁴ DNRM (2016) *Queensland's mining and petroleum industry overview*,
<https://www.business.qld.gov.au/invest/investing-queenslands-industries/mining/resources-potential/mineral-resources/metalliferous-industrial-minerals>

Commonwealth specific reforms

The Lock the Gate Alliance has suggested reforms outlined below in the body of this submissions which can be implemented separately or could be managed and facilitated under a Commonwealth Environmental Protection Agency. We believe the establishment of such an Authority is long overdue and would ensure a nationally consistent and coordinated approach to a range of issues related to the management, regulation and protection of Australia's biodiverse and resource-rich environment. We believe the reform of Australia's approach to mine closure and rehabilitation would be best achieved through the establishment of a Commonwealth EPA.

Establishing a Commonwealth Environmental Protection Authority

The following analysis was undertaken by the Australian Network of Environmental Defender's Offices in 2012.

The EPA could be established to have three core functions:

- setting national standards for States and Territories to implement;
- assessment/concurrence roles for relevant developments such as mining; and
- compliance and enforcement.

The EPA's responsibilities for regulating air, water and land pollution should be specified in the legislation as enforceable duties. These duties should require that the EPA sets and reviews lists of pollutants and emissions standards, and imposes best practice standards on all licenced facilities to be implemented through State and Territory legislation.

This would cover EPBC conditioning, national standards and potentially incorporate the proposed National Abandoned Mines Commission within its structure. The EPA could drive and facilitate the other recommendations – the review of State and Territory mine rehabilitation liabilities, asset transfers and financial reporting - in partnership with other Commonwealth Agencies.

Management, regulation and protection of Australia's biodiverse and resource-rich environment has given rise to a unique set of legal challenges, not least of all because the Constitution of Australia does not expressly empower the Commonwealth to create environmental or resource management laws. The Commonwealth may only pass laws based on 'powers' specified in the Constitution. This means that certain areas may only be regulated by the States and Territories. These powers have been broadly interpreted by the High Court so as to afford the Commonwealth increasing scope to legislate in areas that were once thought to be the sole domain of State and Territory Parliaments. Since Federation in 1901, successive Australian governments and the High Court have examined, defined and redefined the complex relationship between States' rights and Commonwealth legislative powers. It is now clear that the Commonwealth may rely on a range of constitutional 'powers' to create laws to manage our environment in accordance with the principles of Ecologically Sustainable Development (ESD). It is also clear that they may regulate mining in order to protect Australia's unique natural heritage and food producing land.

The Constitution does not include a 'mining power', a 'land use power', an 'agriculture power' or an 'environmental power.' As a result, it is necessary to determine which of the other powers may be used to enable the Commonwealth to pass laws regulating mining for the purposes of implementing ESD. Based on our analysis of High Court cases and/or existing legislation, we are of the view that Commonwealth Government is able to rely on the following powers to regulate aspects of coal mining and unconventional gas development:

- External affairs power - s. 51 (xxix) - the external affairs power enables the Commonwealth to create laws regulating the environmental impacts of mining as long as those laws constitute proper implementation of the environmental treaties to which Australia is a signatory.ⁱⁱⁱ
- Corporations power - s. 51 (xx) - the 'corporations power' confers broad power on the Commonwealth to legislate in respect of most areas directly or indirectly relevant to the operation of corporations covered by s. 51 (xx). Corporations covered by s. 51 (xx) are 'foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth' (constitutional corporations).^{iv} This arguably includes the activities of mining companies, including the construction and operation of ancillary infrastructure. Almost all corporations undertaking mining (including statutory corporations) would clearly satisfy the definition of a 'constitutional corporation'. Notable exceptions would include incorporated associations that undertake various activities, including mining. However, it is entirely possible that in applying the 'activities test', these entities could still be classified as 'constitutional corporations'.
- Trade and Commerce power - s. 51(i) - empowers the Commonwealth to make laws with respect to 'trade and commerce with other countries, and amongst the States.' The power enables the Commonwealth to regulate interstate and overseas trade and commercial activities of mining companies. This would include most aspects of 'transporting' goods from one place to another (that is, interstate or overseas). It also includes background negotiations and financial transactions. While Commonwealth legislation regulating trade or commercial aspects of mining in Australia must not advantage or disadvantage operators (including electricity generators, retailers etc.) in one State (relative to operators in other States) (section 92); the power enables the Commonwealth to:
 - regulate those aspects of mineral and petroleum extraction that may impact – positively or negatively – on the export of those products
 - pass laws regulating the environmental impacts of coal mining and unconventional gas activities where the final products are being exported. This may extend to refusing to grant an export licence
 - regulate intrastate trade of coal or unconventional gas (or associated activities) where it is inextricably connected to interstate or export trade.^{vi}
- Territories power - s. 122 - The 'territories power' enables the Commonwealth to pass laws that apply to Australian territories, that is the Northern Territory, the Australian Capital Territory, as well as external territories. The 'territories power' is a plenary power which means the Commonwealth is not limited to creating laws covered by the other powers in the Constitution.^{vii} For example, it is more than likely that the 'territories power' could be relied

upon by the Commonwealth to regulate shale gas exploration and production in the Northern Territory.

- Incidental power (s. 51 xxxix) - The Commonwealth may pass laws that are 'incidental' to the exercise of any other powers in the Constitution. Laws that are 'incidental' to the exercise of a power generally regulate something that is indirectly connected to a subject regulated by that power. For example, the export of minerals could be described as a legitimate subject of the 'trade and commerce power'; according to the High Court, regulating the environmental impacts of mining is indirectly connected to this subject. The court was able to reach this conclusion because there was a sufficient connection between the regulation of these impacts and the export of the minerals.viii

In addition to unilateral Commonwealth legislation based on these five Constitutional powers, there are a number of cooperative processes that can and have been used to determine responsibility for natural resource management in Australia. Federal policy coordination and the development of agreements through COAG should be used in relation to strengthening regulation of mining in Australia to ensure such activities are consistent with ecologically sustainable development. In regards to coal, this should include the adoption of SMCRA type legislation for coal mining in Australia.

There is therefore no strictly legal impediment to establishing a Commonwealth EPA to have oversight of mining including mine closure and rehabilitation.

Asset transfers

There is a growing trend of large mining houses selling aging or uneconomic (in regards to the major's cost structure) mine assets to junior miners in some cases at a heavily discounted price, or in extreme cases for as little as \$1 or indeed in the case of Rio Tinto's Blair Athol mine where Rio paid \$80m cash to the Queensland Government as a cost offset for the site's rehabilitation.

This practice potentially exposes the taxpayer to the cost of rehabilitation given the junior mining company may not have either the financial or technical capacity to rehabilitate the site. While the FA maybe transfer to the buyer, we believe the FAs do not genuinely reflect the cost of rehabilitation and in the case of bankruptcy the FA may be unavailable. To date, only Queensland appears to have made a serious attempt to provide powers to recover monies owing from Directors of companies who are declared bankrupt through its Chain of Responsibility legislation. That legislation has been a very important step forward and is an important precedent nationally, but its scope is limited and it does not prevent mines being off-loaded to debt-ridden junior miners and it is yet to be tested.

We believe the Commonwealth should explore mechanisms to ensure that the financial and technical capacity of purchasers to deliver their rehabilitation responsibilities could be tested and vetted to protect the public interest.

This could be achieved under the ASIC Act – where an additional public interest test could be applied covering closure and rehabilitation liabilities and the buyers technical and financial capacity to meet there liabilities. We believe this would be covered by relevant Constitutional legislative powers such as:

- a. corporations - s 51(xx)
- b. trade and commerce – s 51(i)

- c. bankruptcy and insolvency – s 51(xvii)
- d. external affairs – s 51(xxix)

Financial reporting.

Investors and financial analysts should take greater interest in and demand greater transparency in regards to mine closure liabilities because the way closure costs and risks are represented on corporate balance sheets masks a potentially material business risk.

In spite of a strong business case to invest in mine closure planning early in the project cycle to minimise total cost by maximizing progressive rehabilitation throughout the operations life, mining companies continue to prioritise short-term cash flow over long-term risk management. Until recently, the pervasive view within the industry and amongst investors has been that poor closure and rehabilitation is a long-term issue with only minimal risk.

This situation is changing rapidly. Increasing public awareness of the industry's poor track record, weak regulation and the growing burden on the tax payer of more than 50,000 abandoned mines across Australia is bringing the issue of mine rehabilitation onto the political radar – as witnessed by this Senate Inquiry. Mine rehabilitation is rapidly becoming an issue that is impacting the industry's social licence to operate.

More pointedly though, mine rehabilitation is an investor issue because;

- Undervaluation of closure costs can impact the balance sheet - A “sleeper” contingent liability impacts the valuation of the company particularly those mining companies with low cash flow and a narrow asset base. Significant closure liabilities can impact available cash reserves and shareholder distributions. Should companies need to significantly adjust their closure provisions, the risk profile, credit ratings and share prices could be negatively impacted.
- Mine closure is expensive. Large open cut mines can cost hundreds of millions - and some cases - over a billion dollars to close. Currently, the Ranger Uranium Mine and Century Mine (zinc) are the two largest mine closures to date. These two mines will cost in the vicinity of \$750m to \$1bn to close once complete, and the outcomes in regards to residual risks and perpetual liabilities to the parent companies – Rio Tinto and MMG respectively - are at this stage unknown.
- The timing and magnitude of mine closures has the potential to impact balance sheets. Perhaps the most serious risk is to cash flow. If a company's portfolio is dominated by aging or short life assets then there is a risk that closure costs will start mounting as assets close in relatively quick succession and impact free cash flow. This may be exacerbated by the current sustained downturn in commodity prices which will bring closure forward.

In order to better understand mine closure and rehabilitation risks, investors and shareholders should request the following information from mining firms:

1. Timeframe to closure for each asset;
2. Total estimated cost of closure for each asset both in terms of the present closure obligation (unplanned closure) and total projected cost (at the end of the mine's life – before and after discounting for time values);
3. The mine closure risk assessment for each asset;
4. The rehabilitation bonds and financial assurance held as an offset;

5. Investment to date in progressive rehabilitation – the current disturbed land to rehabilitation ratio for each mine site.

We recommend mandatory disclosure of the items above. For ASX listed companies, changes could be made to ASX listing rules, however, given the public interest aspect that would apply to both private and public companies, it is preferable that changes are made to the *Corporations Act* to maximise coverage of mining and resource companies.

EPBC conditioning for mines impacting on Matters of National Environmental Significance (MNES).

To ensure that approved mines have the lowest possible impact on MNES, rehabilitation related conditions must be applied to these projects through the EPBC Act. This includes;

- The proponent must submit a full life of mine and closure plan at the approvals stage which includes rehabilitation strategies designed to specifically protect the at risk MNES,
- The proponent must submit a progressive rehabilitation plan including rehabilitation targets designed to enhance the protection of the at risk MNES during the mine's operational life
- The Commonwealth should require an independent assessment of the closure cost estimate based on the closure plan that informs the relevant jurisdictions level of FA with specific reference to protecting the MNES,
- The final landform and land use must reflect the lowest possible residual impact on the at risk MNES and mandate that voids are backfilled and out of pit waste rock dumps and tailings storage facilities are eliminated where these landforms have a demonstrable residual impact on MNES..

Guidelines should be developed as part of the EPBC assessment process to require these matters to be addressed.

Abandoned mines.

There have been numerous attempts to create a national response to the abandoned mines situation. The latest - the 2012 Managing Mining Legacies Forum – brought a range of industry, government, academic and non-government stakeholders together to discuss a path forward. The forum also involved several Canadians who have practical experience dealing with this complex issue in a constitutional context similar to Australia's.

The forum focused on the implementation of the Strategic Framework for Managing Abandoned Mines in the Minerals Industry (MCMPIR/MCA, 2010

<https://industry.gov.au/resource/Mining/Documents/StrategicFrameworkforManagingAbandonedMines.pdf>) and to address abandoned mine issues in general.

The Forum delivered a Report which outlined an action plan that, although modest in its ambitions, is a platform for national action which is relevant to this Senate Inquiry.

The Commonwealth could demonstrate leadership on the abandoned mines issue through the establishment of a National Abandoned Mines Commission based in part on Canada's National Orphaned Abandoned Mine Initiative (NOAMI). This Commission would be charged with furthering the Implementation Plan for the Strategic Framework by SCER (Standing Committee on Energy and Resources) under COAG (Coalition of Australian Governments).

Although the establishment of a Commission is a modest proposition, it is entirely consistent with what the experts in the field believe is the best path forward and has proven very elusive.

The 2012 Managing Mining Legacies Forum outcomes/"findings" included;

- Abandoned mine management is a critical social and environmental responsibility in Australia
- As resources are limited for abandoned mine management, it is important to identify and apply common or transferrable information management and operational models across jurisdictions
- The Canadian NOAMI model and Provincial Crown Contaminated Sites program in British Columbia, both provide useful models for Australian jurisdictions and stakeholders to consider
- Each jurisdiction in Australia would benefit from more frequent and focused forums to share knowledge and resources as they all face similar issues but may be at a different stage of program maturity.
- Potential partnership opportunities exist which could support the implementation of the Strategic Framework. However there is currently no political will to progress with development of an Implementation Plan for the Strategic Framework by SCER under COAG
- The Centre for Mined Land Rehabilitation and other Sustainable Minerals Institute Centres (at the University of Queensland) would be well placed to provide valuable knowledge and expertise to mining legacy challenges via a national hub
- There is potential for industry as well as governments and other stakeholders to gain an understanding of their roles by the formation of a NOAMI- type hub for coordination of ideas and research, and by learning from Canada, other jurisdictions in Canada and NGOs.
- Full liability accounting is needed to ensure governments understand the scale of abandoned mine/mining legacies across jurisdictions. This forms the basis for development of policies and well-focused programs, engaging appropriate expertise and preparing progress reports on performance (improvements and expenditure)
- The same high standard should be applied to abandoned mine regulation as is applied to active mines. Mines, health, environment and heritage departments all have responsibilities for abandoned mines and these departments and their expertise need to be actively engaged by a lead agency.

National standards.

There are numerous inter-governmental processes that could form the platform for the adoption of a set of nationally binding standards for mine rehabilitation.

The National Strategy for Ecologically Sustainable Development (COA 1992) (NSED) promotes economic growth that safeguards the welfare of future generations, provides equity within and between generations, protects biological diversity and maintains essential ecological processes and life support systems. The ecologically sustainable development (ESD) framework includes the "polluter pays" principle, i.e. those who generate pollution and waste should bear the cost of containment, avoidance or abatement. To ensure sound environmental practices throughout the industry, NSED also sets several objectives for mining including development of rehabilitation policies based on:

- repairing the land so its ongoing maintenance needs are consistent with those of equivalent unmined land under equivalent land use;
- rehabilitation requirements that are open to public scrutiny;

- treating rehabilitation and mine closure as integral components of the planning and operation of mines.²⁵

The Australian and New Zealand Minerals and Energy Council (ANZMEC) and the Minerals Council of Australia (MCA) jointly published the Strategic Framework for Mine Closure (ANZMEC 2000). The framework recognised that the mining industry is responsible for rehabilitation of mine disturbance in an environmentally and socially acceptable way. It considered mine planning, stakeholder involvement, financial provisioning for rehabilitation, implementation, standards and relinquishment; and developed the following key principles:

- legislation should provide a broad regulatory framework for the mine closure process;
- standards of rehabilitation should be acceptable and achievable;
- completion criteria are specific to each mine and should reflect its unique set of environmental, social and economic circumstances; an agreed set of indicators should be developed to demonstrate that successful rehabilitation has been achieved;
- targeted research will assist both government and industry in making better decisions about rehabilitation.²⁶

In 2003, the International Council on Mining and Metals (ICMM) adopted 10 principles for sustainable development for mining. Specific elements of Principles 4 and 6 included:

- consulting interested and affected parties on all significant impacts;
- regularly updating risk management systems;
- providing safe disposal of waste and process residues;
- rehabilitating land in accordance with appropriate post-mining land use.²⁷

The MCA sought government input when it developed Enduring Value (MCA 2004). That publication provides a framework for implementing the ICMM principles in an Australian context and indicates that effective rehabilitation planning and implementation are intimately linked to the “social licence to operate”. The ICMM has stated that the mining industry’s contribution to sustainable development is dependent on ensuring acceptable long-term environmental performance of mine rehabilitation (ICMM, 2005).²⁸

The mining industry has from time to time engaged with Australian governments to improve the mutual understanding of how rehabilitation can minimise the future impacts of mining activities. During the 1990s, the Commonwealth Government supported the development of a series of booklets on Best Practice Environmental Management in Mining. The Commonwealth Department of Resources, Energy and Tourism are currently replacing this series with booklets in the series Leading Practice Sustainable Development Program for the Mining Industry.²⁹ Generally speaking these booklets reflect leading practice. However in the absence of a process that sees this guidance translated into action on the ground, they have little impact on rehabilitation performance.

²⁵ Guideline Resource Activities - Rehabilitation requirements for mining resource activities. EM1122, Department of Environment and Heritage Protection, 2014

²⁶ *ibid*

²⁷ Guideline Resource Activities - Rehabilitation requirements for mining resource activities. EM1122, Department of Environment and Heritage Protection, 2014

²⁸ *ibid*

²⁹ *ibid*

Generally speaking however the industry has failed to demonstrate any real leadership that has resulted in any positive reform. As we have documented the States and Territories equally have failed to deliver on driving a sustained improvement in mine rehabilitation performance.

On this basis we strongly recommend that the Commonwealth commits to working with the state and territories to develop a set of national standards covering the following six issues;

- Adequacy of financial assurances
- A final land form and land use policies
- Adequacy of legal requirements requiring progressive rehabilitation and best practice mine closure planning
- Closing loopholes that allow indefinite 'care and maintenance'
- Assessment regimes around sale of aging mine assets to minnows
- Adequacy of monitoring and enforcement regimes including strong legal penalties for non-compliance
- Investigation of state and territory mine rehabilitation strategic plans designed to deliver a coordinated approach that maximizes local employment and minimizes long-term environmental legacies

Review by the Federal Treasury into State and Territory liabilities.

Given the extent of exposure of taxpayers and state and territory treasuries and balance sheets to the combination of abandoned mines liabilities and inadequate financial assurances (see Financial Liability above), we believe there is a legitimate role for the Commonwealth Treasury to undertake;

- An assessment of the overall financial liability stemming from both abandoned and operating mines under the various state schemes
- The risk these liabilities pose to state and territory treasuries and balance sheets, and
- The identification of remedies and risk mitigation strategies through policy, programme and legislative reform

Broad generic reforms necessary to drive improved mine rehabilitation performance

There is a package of reforms that is required across all state and territory jurisdictions in order to drive improved mine rehabilitation performance. While some jurisdictions have made moves on one or a number of these, in the absence of an integrated approach that includes a mix of policy reforms and reforms to the financial assurance regime it is unlikely that the situation will change to the degree it needs to in order to protect the public interest and the environment.

These reforms are presented to the Inquiry to inform it in regards to what needs to be pursued at the State and Territory levels to achieve leading practice outcomes. In the context of the Commonwealth's role we would strongly recommend that the Commonwealth commits to working with the state and territories to develop a set of national standards covering the following six issues and informed by industry best practice.

The key reforms in this package include;

1. Upfront financial assurances in cash must be paid by mining companies based on independent estimates of full rehabilitation costs

- Financial assurances (FA) must be in the form of upfront cash payments rather than bank guarantees.
 - FAs will be held by the State or Territory Government in a dedicated fund and the interest used for compliance and enforcement, and also to deal with the significant environmental threats posed by abandoned mines (see employment opportunities above).
 - FAs should be administered and calculated by a fully independent specialist authority and the approved calculator should be regularly reviewed and based on independently verified default costs for main items
 - There should be no discounts allowed on financial assurances and no use of industry calculators
 - An immediate rolling audit should be conducted of all the financial assurances of all existing mines against an improved government calculator of rehabilitation costs and companies should be required to increase FA to meet the revised estimates as soon as possible
 - Full disclosure of rehabilitation liabilities to taxpayers, shareholders and the financial markets should be mandated by law
2. A final land form and land use policy should be developed for each jurisdiction which ensures that the public's expectations in regards to the goals of mine closure and rehabilitation are met. This should include a focus on;
- Backfilling and minimizing final pit voids
 - Management of acid, radioactive, saline and metalliferous waste
 - Treatment of mine tailings dams
 - Rehabilitation of surface and groundwater resources
 - Revegetation including biodiversity and re-instatement of agricultural productivity
3. There should be strict legal requirements to require progressive rehabilitation and best practice mine closure planning
- Leading practice industry mine planning and mine closure standards must be implemented, to at least match those in the US Surface Mining Control and Reclamation Act and to prohibit any future final pit voids in coal, bauxite and other non-hard rock operations. Hard rock mines should be required to minimise the magnitude and impacts of voids with special attention to eliminating the impacts from acid and metalliferous drainage.
 - Approvals for new mines and mine extensions must require a fully-costed mine closure plan, including detailed final land form design and stakeholder sign off
 - The capacity of relevant state and territory government departments must be dramatically increased to ensure adequate oversight of life of mine planning, closure and rehabilitation
 - Legislation must be amended to require that mining tenure renewal is dependent on delivery of progressive rehabilitation
 - All mine operations permits for all mines must be amended to include fixed, non-negotiation rehabilitation ratios that are maintained through the life of the mine. For coal and bauxite this should be 1:1 after an appropriate open operational mining area is agreed.
4. Loopholes that allow indefinite 'care and maintenance' and sale to minnows must be closed
- Strictly limit 'care and maintenance' and put in place strict financial requirements and standards to prevent sale of mines to minnows who do not have capacity to undertake full rehabilitation

- In the event of the sale of a mine, existing mine operating permit conditions and the FA should be reviewed and updated to ensure the full cost of rehabilitation and associated liabilities are transferred to the new owner
5. A rigorous monitoring and enforcement program must be implemented with strong legal penalties for non-compliance
 - Increase the powers of the relevant regulator to monitor and enforce compliance with mine rehabilitation
 - Increase the legal penalties associated with any failure to meet rehabilitation requirements
 6. All state and territories should develop and execute mine rehabilitation strategic plans designed to deliver a coordinated approach that maximizes local employment and minimizes long-term environmental legacies

Appendices

Appendix A - ABANDONED MINES IN QUEENSLAND - Toxic Time-Bomb or Employment Opportunity?

Appendix B– TAI “Dark side of the Boom” study

Appendix C – TCP Report

Appendix D – Lock the Gate analysis of the Queensland FA Calculator

Appendix E – Lock the Gate - Best practice guidance mine closure planning

Appendix F – Lock the Gate - Best practice guidance closure cost estimation

Appendix G – The Australia Institute – Public Opinion on Mine Site Rehabilitation

Appendix H – The Hole Truth” Report