

Mine closure planning and social responsibility in Western Australia: Recent policy innovations

Angus Morrison-Saunders

Murdoch University, Australia; North West University, South Africa

Jenny Pope

Integral Sustainability, Australia; Curtin University, Australia; North West University, South Africa; University of Cambridge, UK

ABSTRACT

Social responsibility should be embedded into all phases of the mining project cycle. This paper presents an account of recent policy and legislation for mine closure planning in Western Australia focusing on how social responsibility is accommodated. Policy and legal provisions are reviewed along with secondary accounts from government sources. Mine closure in Western Australia is regulated in two main ways: mine closure planning and mining proponent contributions to a mining rehabilitation fund. Mine closure plans must be prepared within mining and/or environmental assessments. Proponents must regularly review them for the duration of mining with increasing level of detail as the life of mine advances. Financial provisioning for mine closure is also included. Key stakeholders must be consulted by mining proponents to determine post-mining land uses and these are incorporated into mine closure plans before new mining projects will be approved. In addition to biophysical specifications in mining authorisations, the stakeholder consultation process likely will give rise to social responsibility measures in mine closure plans. Under the new mining rehabilitation legislation which was developed in consultation with mining industry stakeholders, proponents will be levied annually at one per cent of the rehabilitation liability estimate per mining tenement. The money collected goes into a central fund. Interest earned will be used to rehabilitate legacy abandoned mines while the capital will be used to rehabilitate any abandoned mine sites covered by the fund. The fund overcomes limitations of the former individual performance bonds system. Rehabilitation must be in accordance with mining authorisations which will invoke the mine closure plan framework and its implicit social responsibility provisions. The new Western Australian mine closure policy and regulatory framework offers a means for effectively managing both planned and unintended mine closure including implicit consideration of social responsibilities by mining proponents and government alike.

INTRODUCTION

While social responsibility should be appropriately accounted for during the entire mining project cycle, it is especially important from a sustainable development perspective for the mine closure stage. Owing to its extractive nature, mining is intrinsically a short-term or temporary land-use activity for a given location and it is mine closure that marks the start of the long-term legacy realisation. Essentially mine closure can come about in two main ways: abandonment or end-of-life-of-mine planned shut down. Both situations should be planned for, and ideally before a mining activity actually commences; notwithstanding retrospective arrangements can be put in place for either scenario.

The volatility of mineral prices may lead to sudden or unexpected mine abandonment and also to re-opening of previously closed-down sites if the ore body again becomes profitable to exploit. Hence mine closure may not occur as originally planned or envisioned with subsequent risks for environmental and social outcomes. This inherent uncertainty requires policy and regulatory provisions that can maximise assurance that mine closure will be appropriately provided for whether proceeding under the planned management by mining companies or through contingency plans established by government.

Our aim in this paper is to examine mine closure planning provisions in Western Australia where mining is a mainstay of economic development activity. In keeping with the theme of the SR Mining conference, our analysis focuses on social responsibility in the mine closure planning arrangements, notwithstanding that they also have environmental rehabilitation and management emphasis too. Arguably of course, environmental protection in mining is one aspect of social responsibility since quality of the surrounding environment will obviously affect human well being, especially in light of some of the contamination and safety risk potential associated with mining activity (e.g. acid main drainage, radioactivity, dispersive soils, unstable slopes and pits to name a few).

Our research methodology is based in the main upon literature review and document analysis. In particular our emphasis is on examining and explaining the policy and regulatory provisions within Western Australia along with comments upon performance derived from available sources; often the latter arising from reports and presentations by industry stakeholders and other 'grey literature'. Our research forms part of a larger AusAID Development Research Awards Scheme (ADRAS) funded project that commenced in 2013 and will end in 2015 to investigate policy innovation in mine closure management, environmental risk mitigation and rehabilitation of abandoned mine sites in Western Australia and a number of countries in sub-Saharan Africa. Underpinning this research is the assumption that recent policy and regulatory developments for mine closure planning in Western Australia may be of value for adaptation and application within African countries currently experiencing a rapid growth in mining-related development activity. SRMining 2013 is one of the first forums at which initial findings from this research are being presented and we hope that the material we present has some relevance or application opportunity for other places in the world where mining is a major land-use activity and where a significant social responsibility legacy is at stake.

We begin by describing the recently established mine closure planning arrangements in Western Australia, including the rationale for their emergence. We then highlight the social responsibility

provisions or potentiality. We conclude with a summary of key features of the new policy and regulatory framework for mine closure in Western Australia along with some thoughts on promising ways forward for effective mine closure for social responsibility.

POLICY AND REGULATIONS FOR MINE CLOSURE PLANNING IN WESTERN AUSTRALIA

The resources sector in Western Australia is not only a major component of the state's economy (and that of Australia as a whole) but has been growing rapidly in recent years. For example for the year 2011, the Department of Minerals and Petroleum (DMP, 2012) report that it represented ninety five per cent of the State's total export of goods and that mineral exploration reached a record level of \$1.6 billion (Australian dollars - AUD) which accounted for fifty four per cent of total exploration expenditure in Australia. DMP (2012) also reported that at the end of the financial year an estimated \$138 billion (AUD) was invested in resources projects under construction or in the committed stage of development with a further \$169 billion of planned or possible projects. DMP (2012) state that the long term economic prosperity of Western Australia is linked with the resources sector. It is thus self evident that management of the mining cycle especially with respect to mine closure and legacy issues in Western Australia should be an important component of the regulatory system.

Key responsibility for not only attracting investment in resource exploration and development in Western Australia but also in regulating subsequent mining activities is vested with the DMP in accordance with the provisions of the *Mining Act 1978 (WA)* as well as the recently proclaimed *Mining Rehabilitation Fund Act 2012 (WA)*. Mining activities likely to have a significant adverse impact on the environment will normally be subjected to environmental impact assessment (EIA) in accordance with the provisions of the *Environmental Protection Act 1986 (WA)*; hereafter *EPA Act*) as overseen by the Environmental Protection Authority (EPA). The EPA seek to avoid duplication of assessment and approval processes and will utilise alternate regulatory processes (i.e. such as those of the DMP) wherever satisfied that they will deliver appropriate environmental protection (EPA 2013) and they have entered into a memorandum of understanding with the DMP (available at <http://edit.epa.wa.gov.au/EPADocLib/EPA-DMP-MOU.pdf> - accessed 26Jun2103) to generally determine which mining activities can normally be handled by the DMP processes alone. Where mining activities are subjected to EIA leading to the imposition of approval conditions issued by the Minister for the Environment under s45(5) of the *EPA Act*, these are legally binding upon the mining proponent.

Mine closure in Western Australia is regulated in two main ways: provisions for mine closure planning as part of the initial assessment and approval processes operated by DMP and/or the EPA for new mining proposals; and requirements for mining proponents to contribute to a mining rehabilitation fund. These are discussed in turn.

Mine closure planning provisions

There has long been an expectation and legal requirement for mining proponents to rehabilitate mine-sites in Western Australia. For example s26(a) of the *Mining Act* states that: 'any person carrying out mining operations on the land shall make good injury to the surface of the land or injury to anything on the surface thereof'. However, amendments were made to the *Mining Act* in

2010 that specifically require a Mine Closure Plan to be submitted by mining proponents to DMP for approval as part of mining proposal applications (s70O) and to be reviewed at least every three years after a mining lease is granted (s84AA). A mine closure plan is defined in s70O of the *Mining Act* as a document that contains information 'about the decommissioning of each proposed mine, and the rehabilitation of the land' for which a mining lease is sought or granted and it also establishes that these documents must be in the form required by guidelines approved by the Director General of Mines. Mine closure plan guidelines have been jointly prepared and published by DMP and EPA (2011).

The mine closure plan guidelines state that: 'the Government's broad closure objectives are (physically) safe to humans and animals, (geo-technically) stable, (geo-chemically) non-polluting, and capable of sustaining an agreed post-mining land use' (DMP & EPA 2011, p23) and that the 'EPA's primary objective is to ensure that the mine is capable of being closed in an ecological sustainable manner' (DMP & EPA 2011, p6). They also state that the EPA will generally not assess mine closure as part of its EIA of mining proposals under the *EPA Act* when they are subject to the *Mining Act* and will only do so where high environmental risk is identified (p6). This is to minimise regulatory duplication and the guidelines indicate that where the EPA does assess mine closure and sets a corresponding environmental approval condition, compliance monitoring of these may be delegated to DMP (p7).

Scale of mining operation is taken into account in the mine closure plan guidelines whereby 'the level of detail required to assess the environmental impacts and closure requirements is much less than that required for typically larger mining operations' (DMP & EPA 2011, p8). Similarly the level of closure detail expected is linked to the life of mine such that for long term (25+ years) mining activities 'indicative' and 'preliminary' closure plans are sufficient while for short-term (up to 10 years) and small mining operations details must be 'accurate' and plans fully 'completed' (DMP & EPA 2011, p13). The guidelines also address 'unexpected closure and temporary closure' specifying that in the event of unexpected closure, the formal mine closure process should be accelerated while in the case of temporary closure a detailed Care and Maintenance Plan is required to be prepared and submitted that demonstrates that 'on-going environmental obligations will be met' during the closure period (DMP & EPA 2011, p9).

Two other features of the mine closure plan process provided for in the DMP & EPA (2011) guidelines which have a particular social responsibility element are that:

- Financial provisioning for closure is included 'to ensure that adequate funds are available at the time of closure and that the community is not left with an unacceptable liability' (p26).
- key stakeholders, defined as 'post-mining land owners/managers and relevant regulators' (p21), are consulted by proponents and this process should include 'acknowledging and responding to stakeholder's concerns' (p14) and that 'Post-mining land uses should be identified and agreed upon through consultation before approval of new projects' (p14).

The stakeholder consultation expectations are generally in accordance with national and international expectations for mine closure planning and rehabilitation (e.g. Minerals Council of Australia 2005, Department of Industry Tourism and Resources [DITR] 2006, ICM 2008). However, unlike these other documents, no specific guidance is provided within DMP & EPA (2011) on how to identify and consult with appropriate stakeholders, nor on how to reach agreement on post-mining land uses. This is despite the inclusion of various appendices to the main text within DMP & EPA (2011) such as:

- Appendix F entitled 'Example of stakeholder consultation table' (p48) which simply lists suggested timing for consultation and identifies only broad stakeholder types (traditional owners, pastoralist neighbour and local shire);
- Appendix G entitled 'Examples of closure objectives' (pp49-50) which provides a list of bullet points under headings such as landforms, revegetation, fauna and water; and
- Appendix H entitled 'Specific mine closure issues' (pp51-69) which addresses topics such as acid-mine drainage, radioactivity, dispersive materials and rehabilitation.

In short, all of the examples revolve around biophysical aspects of post-mining performance and although many of these will have direct bearing on human quality of life no consideration is given to socio-economic matters specifically. By way of comparison, the DITR (2006) document provides three mine closure planning and/or execution case study examples from Western Australia, one of which focuses on 'good planning, team building and ... cooperative partnerships' (p44) initiated by a mining company (Newmont-Mt McClure) for the Mt McClure gold project, which was recognised with the Golden Gecko Award for Environmental Excellence in 2004. Provision of more specific public consultation guidance and/or a worked example along the lines of those in DITR (2006) is one area where the Western Australian mine closure planning process could potentially be enhanced.

Mine closure planning effectiveness and social responsibility

The mine closure planning provisions are still relatively new and in the early stages of implementation; no formal reviews of practice have been undertaken to the best of our knowledge. However anecdotal feedback provided by Gentle (undated) identifies some good points and some concerns with the new policy and regulatory requirements. Good points include the mining industry being forced to start planning for closure earlier than would otherwise be the case and consequently forcing proponents and regulators to talk to each other about the issues. There have also been moves to train mine engineers and planners using the new guidelines and the emergence of new businesses specialising in mine closure and rehabilitation. One concern raised by Gentle (undated) under the title of 'the tyranny of net present value' is that he suggests the costs of mine closure are wildly underestimated and that ultimately there may be an unfair burden placed on future generations to 'pick up the tab' on the basis that total costs of full mine-site rehabilitation may ultimately prove to be far greater than the value of mineral produced. Gentle (undated) also suggests that old mines typically never actually close and progress to relinquishment of mining leases; rather they are more likely to be sold to somebody else and to be re-mined at some point in the future either because of rising commodity prices or improvements in ore refining technology. If the concerns raised by Gentle (undated) prove to be the case, then there will be serious social responsibility implications contrary to the objectives underpinning the mine closure plan arrangements.

Of a more immediate nature, it is noteworthy that the provisions of the *Mining Act*, the *EPA Act* and the mine closure plan guidelines all primarily focus upon biophysical aspects of mine-site closure and rehabilitation. However the Foreword of the guidelines states the following:

Although the guidelines focus on the ecological aspects of mine closure planning, DMP and the EPA encourage proponents to consider socio-economic aspects of closure planning, in particular, impacts of mine closure on local communities. This is in line with the sustainable

development principles defined by the International Council on Mining and Metals ... (DMP & EPA 2011, p3).

While we consider it to be a positive element of the mine closure planning guidelines that the DMP and the EPA encourage mining proponents to address socio-economic aspects, it is important to realise that there is no formal mechanism in use in Western Australia to address social impacts. The EPA (2008, p14) have previously publicly stated this before when considering alternative locations for a large scale liquid natural gas (LNG) processing precinct in the Kimberley region of Western Australia as follows:

The EPA focuses on environmental issues as defined in the EP Act. It is ... strongly focused on the bio-physical environment. ... The EPA is also aware that there are very important social, cultural and economic issues around development in the Kimberley. ... there is no formal process in Western Australia for the assessment of socio-economic impacts or indeed for their integration with environmental issues into a sustainability assessment (EPA 2008, p14).

The subsequent assessment of the chosen site for the LNG plant did include a social impact assessment, but as noted by Beckwith (2012) the scope of social impacts that could be incorporated into approval conditions is extremely narrow.

It appears to us that the key mechanism for including social impact and responsibility provisions into the mine closure planning process will arise solely from the stakeholder consultation requirements discussed previously and especially the requirement to agree to the post-mining land uses with stakeholders. Clearly there is scope in Western Australia to improve the provisions for social responsibility in mine closure planning with respect to both assessment processes and in the guidance provided to mining companies.

Mine rehabilitation fund

Prior to promulgation of the *Mining Rehabilitation Act* 2012 (WA) which came into force on 1 July 2013, an unconditional performance bond system had been in operation since 1985. Under this system all mining tenement holders were required to provide bonds as security to ensure that they fulfilled their environmental obligations such as those outlined previously. For example s60 of the *Mining Act* requires an applicant for an exploration licence to lodge 'a security for compliance with the conditions to which the exploration licence... will ... be subject' and s126 establishes that such securities may be as bonds for an amount as approved by the Mining Minister. Mining proponents would lodge the bond with a financial institution. In the event of mine abandonment or other failure by a mining proponent to manage their mine-site in accordance with conditions established under the *Mining Act*, the WA government could in principal take possession of the bond and assume responsibility for rehabilitation works.

With respect to the utility of the bonds system in practice, the DMP (2013) reported that: 'The bonds system does not cover the true cost of rehabilitating abandoned mines, and increasing bonds to cover the full rehabilitation costs would impose a significant financial impact upon the mining industry'. Fulcher and Franz (2013) noted that the bonds 'cover only 25-30 percent of Western Australia's contingent liability', thereby making government and wider community vulnerable in the event of unplanned mine abandonment. DMP (2013) further noted that: 'Bonds discourage investment by tying up significant funds that could be used for developing a mining project and

also have to be applied to the specific mine for which the security is held, they cannot be used to address the problem of legacy abandoned mines'. Tying up money in bonds would appear to benefit the financial sector but not the mining sector or needs for rehabilitation and management of mine sites. These weaknesses spurred the evolution of the mining rehabilitation fund approach.

The *Mining Rehabilitation Funding Act* (s4) establishes that 'the main purpose of the Fund is to provide a source of funding for the rehabilitation of abandoned mine sites and other land affected by mining operations'. DMP (2013) state that notes that it is 'a pooled fund, levied according to the environmental disturbance existing on a tenement at the annual reporting date'. The *Mining Rehabilitation Fund Act 2012: Mining Rehabilitation Fund Regulations 2013* (s4) [hereafter *Regulations*] establish a one per cent contribution levy based on the rehabilitation liability estimate per tenement (DMP 2013) to be paid annually into the fund. Interest is accrued within the fund (unlike the situation with bonds) and s8 of the *Mining Rehabilitation Funding Act* establishes that the interest earned would be used to fund rehabilitation of legacy abandoned mine sites (DMP 2013) predating establishment of the fund while the capital only would be used to rehabilitate mine sites levied through the fund. This enables legacy abandoned mine sites to be rehabilitated whilst overcoming any perception mining proponents might have that the fund would be a kind of tax or revenue earning mechanism for government. Importantly the new rehabilitation funding model: 'was chosen following extensive consultation with industry, Government and conservation/community stakeholders' (DMP 2013). This included a preliminary discussion paper of policy options (DMP 2010) and followed by a preferred option paper (DMP 2011) prior to proceeding with drafting the new legislation and regulations.

A key advantage of the new fund is that the pooled money can be drawn upon to restore an abandoned mine, overcoming the limitations of the previous bonds system whereby insufficient money was available in an individual bond to cover all rehabilitation costs. As noted by DMP (2013) money in the fund will be used for rehabilitation 'where the operator fails to meet rehabilitation obligations and every other effort has been used to recover funds from the operator'; thus, the existing provisions of the *Mining Act* and *EPA Act* alike whereby proponents are held accountable for mine site restoration importantly remains as the basis for practice.

With respect to ensuring that the rehabilitation funds are expended appropriately Part 3 of the *Regulations* establishes the functions of a Mining Rehabilitation Advisory Panel which includes processes for identifying and prioritising land suitable for rehabilitation using the fund, the Chief Executive Officer's (CEO; i.e. of DMP) programme for carrying out those projects and the level of expenditure proposed. The *Mining Rehabilitation Fund Act* outlines the responsibilities of the CEO in implementing the Act and makes the fund subject to the *Financial Management Act 2006* (WA). Administration of the rehabilitation fund in this way ensures full accountability and means that the money must be used for the purpose for which the fund is established (i.e. it is free of potential political interference essentially and not able to be diverted to other uses). With respect to the quality or purposes of rehabilitation intended to be achieved when the funds are called upon, the *Regulations* (s3) define 'rehabilitated land' in relation to a mining authorisation, thereby indirectly linking with the mine closure plan process discussed previously. Thus the biophysical and social responsibilities relevant to mine closure planning would be invoked.

The first year of operation of the Mining Rehabilitation Fund Act is on a voluntary 'opt in' basis by industry to provide mining companies with an early opportunity to have their bonds retired (DMP 2013). A Ministerial media statement (Marmion 2013) states that 396 mining companies had

registered before the 1 July 2013 start up; this underscores the effectiveness of the consultation and collaborative processes for developing the new policy framework.

CONCLUSION

A new policy and regulatory framework for mine site closure planning and rehabilitation has recently been established in Western Australia building on existing mining and environmental protection legislation. Key features of the overall policy framework are:

- a strong regulation system to enforce mine site rehabilitation, implemented via approval conditions served on mining proponents under the *Mining Act* and/or *Environmental Protection Act*;
- requirements for mine closure plans to be prepared prior to the commencement of mining which encourage adaptive management and must be maintained throughout the life of the operation;
- legislation and regulations governing how abandoned mines should be funded and managed and funded in the event that the government needs to intervene, including provision of a funding mechanism that can be used for legacy abandoned mine-sites predating the new policy provisions.

While the emphasis of mine site rehabilitation measures is worded principally in terms of biophysical considerations, provisions for stakeholder consultation and to restore mined areas in accordance with land uses agreed upon during the consultation process should ensure that appropriate social responsibility ensues. We acknowledge that explicit inclusion of socio-economic considerations would be appropriate to fully round out the sustainable development credentials of the new policy and regulatory framework for mine closure in Western Australia. Nevertheless the solid foundation of the framework, developed in collaboration with the mining industry provides a positive example for other regions of the world struggling with how to manage both expected and unintended mine closures into the future.

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