

The Mine Environmental Sustainability Program

October 2014

This publication is part of a series summarising program evaluations to enhance the accountability and transparency of NSW Trade & Investment activities. This summary draws on the attached completed program evaluation template.

The Mine Environmental Sustainability Program

The Mine Environmental Sustainability Program ensures effective environmental management by the NSW mining industry. The Program sets best practice standards, maintains security deposits (environmental bonds) to ensure effective rehabilitation, monitors industry environmental performance, undertakes enforcement and compliance, and manages the Derelict Mines Program.

Objective

The objective of the Mine Environmental Sustainability Program is to facilitate the sustainable development of the mineral and petroleum industries in NSW. This is consistent with Goal 1 of NSW2021 that includes a target to increase the value of mining production by 30% by 2020, and Goal 22 to protect our natural environment.

Mining and minerals exploration activities generate environmental impacts (negative externalities) as a by-product. The issue that the Program aims to address is that in the absence of regulatory controls on exploration and mining activities, the Government's sustainability objectives could not be achieved and the industry's social licence could not be maintained. The pursuit of profits in a competitive market would constrain voluntary implementation of environmental impact controls and rehabilitation in order to reduce exploration and production costs, resulting in unmitigated environmental damage from exploration and mining activities.

Options

The alternative options for pursuing the objective that were considered in the evaluation of the Mine Environmental Sustainability Program included:

- the existing Program with an annual budget of approximately \$14 million (including \$4 million for derelict mines), employing approximately 40 staff; and
- a third party assurance-based program, where the mining industry would be required to commission independent third party compliance audits on an annual basis for all exploration and production activities. Setting best practice standards and industry monitoring and compliance aspects of the existing program would be devolved to independent third parties. The annual budget is estimated to be \$1.5 million, and additional costs imposed on the NSW mining industry would be (at a minimum) \$7 million per annum.

Assessment

NSW Trade & Investment program evaluations compare the efficiency and effectiveness of alternative options with that of the existing or proposed program. This involves an assessment of the costs and benefits of each option relative to the base case of 'no program' and, where these benefits and costs have been quantified, a comparison of the net benefit and benefit-cost ratio (BCR) of each option.

A qualitative assessment of alternative options to achieve the objective of the sustainable development of the mineral and petroleum industries in NSW was undertaken. The preferred option was the existing Mine Environmental Sustainability Program, which provides a high level of certainty to the community in relation to the environmental performance of industry and was assessed as providing a net benefit. A third party assurance based program could have lower costs but would generate more red tape, provide less

certainty to the community about the environmental performance of industry, and was assessed as probably resulting in an overall net cost.

Cost recovery

The evaluation assessed the existing program pricing arrangements relative to the cost recovery principles outlined by the Productivity Commission in its 2001 Inquiry Report on Cost Recovery by Government Agencies.

The evaluation found that it is efficient and cost effective to identify the risk creators (mining companies) and elicit a contribution from them at 'fully distributed cost'. This includes program salaries and on-costs, operating costs, an apportionment of full departmental overheads, and a suitable return on assets.

Currently, only the operating costs of the existing Program are recovered via an administration levy on industry. This represents around two-thirds of total existing Program costs.

Performance Measures

Key performance measures and indicators measure program performance and progress towards meeting government policy objectives. They demonstrate how effective a program is in producing the required outputs and achieving the desired outcomes.

Performance measures for the Mine Environmental Sustainability Program were developed with reference to priority actions in NSW2021. These measures and indicators are supported by industry because the greater the frequency of these measures, the more likely it is that the department will achieve the desired outcomes.

Mine Environmental Sustainability Program measures include application processing times, industry audits, reviewing the status of security deposits, and progress on the Derelict Mines Program. Examples of Program output measures and indicators include:

- 90% of Surface Disturbance Notice applications determined within 10 business days;
- 90% of Mining Operations Plan applications determined within 30 business days; and
- 25% of Environmental standards, policies and guidelines reviewed annually.

Future Evaluations

This is the first evaluation of the Mine Environmental Sustainability Program as part of the first group of Departmental evaluations in the inaugural year of the NSW Government Evaluation Framework. As such, the evaluation concentrated on the qualitative aspects of 'formative' evaluation to build the capacity of program management to monitor program's performance in the future – problem identification, program logic and performance measure design. Data collection will now commence to enable quantitative 'summative' evaluation of the Program when it is next scheduled for evaluation under the Framework.

More information

Further information on the Mine Environmental Sustainability Program can be obtained from

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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (October 2014). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the NSW Department of Trade and Investment, Regional Infrastructure and Services or the user's independent advisor.

Attachment: Program Evaluation Template

Division:	Resources & Energy
Program (Current):	Mine Environmental Sustainability Program

Step 1 - Issue or Challenge and Objectives
<p><i>a. Describe the issue or challenge that the program aims to address. That is, why should the department intervene? What would happen in the absence of the program?</i></p> <p>The Government aims to facilitate an expansion of sustainable mining production in NSW. In the absence of regulatory controls on exploration and mining activities, Government sustainability objectives could not be achieved and social licence could not be maintained. The pursuit of profits in a competitive market would constrain voluntary implementation of environmental impact controls and rehabilitation in order to reduce exploration and production costs, resulting in unmitigated environmental damage from exploration and mining activities.</p>
<p><i>b. Identify the groups that would be affected by the issue or challenge without departmental involvement (individuals, industry or community).</i></p> <p>In the short term, the minerals and petroleum industries would benefit from reduced costs without the need for environmental impact assessment, imposition of approval conditions and ongoing regulation of exploration and mining activities. In the longer term, this would likely result in a loss of social licence and consequently substantially higher future costs due to loss of production opportunities.</p> <p>The community, environment and other government Agencies would incur increased costs in areas affected by the cumulative effects of exploration and mining, including reduced air, soil and water quality and unrehabilitated areas that could not support reuse following completion of activities.</p> <p>Individuals (landowners) would bear additional costs associated with exploration and mining activities conducted on their land.</p>
<p><i>c. Quantify the impact of the issue in the absence of departmental involvement - the severity of the issue should be demonstrated with quantitative data where possible on the significance and consequences of the issue or challenge in the absence of departmental involvement. If no such 'cost' estimate exists, proxy information can be provided to give an indication of potential 'scale', such as industry value of production.</i></p> <p>The current estimated cost to rehabilitate land affected by planned and current exploration and mining activities is \$1.6 billion (estimated through consideration of the rehabilitation security bonds set and held by the Department to take account of activities being performed, as at 30 June 2014). Rehabilitation costs in the absence of regulation would likely be significantly higher than \$1.6 billion due to the incentive to increase production in the absence of regulatory constraints. Environmental damage would likely include sterilisation of land for other users as well as long term impacts on fauna/flora, air and water quality.</p> <p>NSW has more than 600 derelict mines (many over 100 years old) for which an operator cannot be held responsible. Consequently, the liability for rehabilitation of these mines has reverted to Government. This is a direct historical example of the impact of a lack of Government regulation in this space.</p>

d. Describe who or what created the issue or challenge. Examples include specific industry participants (such as producers or consumers) and environmental factors (such as the effect of climate change).

Most unconstrained exploration and mining processes will involve negative impacts on the environment. Without regulation, environmental damage is an uncosted by-product of exploration and mining that is not borne by industry.

Progressive rehabilitation of exploration and mining processes if not managed appropriately can cause adverse environmental impacts. These impacts may result in community dissatisfaction with the mining industry and Government, and loss of productivity.

e. List current programs or legal instruments (provided by industry or any level of government) which aim to address the issue or challenge. Could these be altered to address the issue or challenge?

Other Programs	Able to be altered?
Commonwealth Department of Environment <i>(Environment Protection and Biodiversity Conservation Act 1999)</i>	Yes , however this is unlikely as it would require the amendment of the scope of Commonwealth legislation and establishment of a new unit to regulate all NSW exploration and mining activities.
Department of Planning and Environment <i>(Environmental Planning & Assessment Act 1979)</i>	Yes , however this would just move responsibility from one NSW agency to another.
Environment Protection Authority <i>(Protection of the Environment Operations Act 1997)</i>	Yes , however this would just move responsibility from one NSW agency to another

f. Identify who might benefit if action [such as the program being evaluated] is taken by the department.

- Government and communities would benefit as the burden of environmental impacts and their associated rehabilitation costs would be borne by the industry rather than transferred to the State.
- Industry would benefit through maintaining the social licence to operate.

g. Statement of Objectives: Determine whether there might be a role for the department in addressing the perceived issue or challenge – i.e. what high-level objectives might a potential program achieve?

Objective: Facilitate sustainable development of the mineral and petroleum industries in NSW.

Policy Alignment:

- a NSW 2021 goal:

Goal 1 of NSW2021 includes a target to increase the value of mining production by 30% by 2020. At the same time, Goal 22 has the aim of protecting our natural environment.

- a NSW Trade & Investment Strategic Plan outcome:

The NSW Trade & Investment Strategic Plan 2012-2015 Result 1 repeats the NSW2021 goal of increasing mining production but includes a strategy (under the Outcome "Improved performance of key industry sectors leading to growth in Gross State Product") of "Support the sustainable development of the NSW mining, gas, agriculture, fisheries and forestry sectors to increase the value of production".

Market failure:

Mining and minerals exploration activities generate environmental impacts (negative externalities) as a by-product of the activity.

Step 2 – Program Options & Design	
<p><i>Identify all potential options for achieving the objective, including those that least impede business activity (refer to Step 2 of the Framework).</i></p>	
<p>Option 1.</p>	<p>Description:</p> <p>The Environmental Sustainability Program ensures effective environmental management by the NSW minerals industry through:</p> <ul style="list-style-type: none"> • setting best practice standards for exploration environmental performance; • setting best practice standards for mine rehabilitation; • assessing applications for, and renewals of, titles and drafting environmental title conditions; • setting and maintaining security deposits against individual titles to ensure effective rehabilitation; • assessing proposed activities and approving as appropriate; • monitoring industry performance; • investigating exploration environmental incidents and complaints; • enforcing compliance with environmental standards through powers including directions, stop work orders, Penalty Infringement Notices, prosecutions and the power to enter land and access documents; • keeping the community informed of industry activities and compliance; and • managing the Derelict Mines Program <ul style="list-style-type: none"> ○ prioritising rehabilitation of more than 600 sites across NSW ○ contracting out and overseeing rehabilitation activities ○ managing the Woodsreef Asbestos Mine rehabilitation (currently funded for \$6.3 million over three years).
	<p>Resourcing requirements:</p> <p><u>Staff:</u></p> <p>The program currently has approximately 40 staff.</p> <p>Total program cost (2013-14):</p> <p><i>(includes funding from both consolidated revenue and industry levies)</i></p> <p>\$14,056,656</p> <p><u>Consolidated revenue:</u></p> <p>\$4,290,355 Woodsreef Mine Major Rehabilitation project (\$6.3 million over life of project)</p> <p>Funding for Woodsreef Rehabilitation works will continue to be funded as a special program from Consolidated Revenue.</p> <p><u>Industry funding:</u></p> <p>The <i>State Revenue and Other Legislation Amendment (Budget Measures) Act 2012</i> imposed an industry levy of approximately \$14 million a year to fund regulatory functions across Mineral Resources Branch, including:</p> <p>\$5,148,000 salaries and on costs</p> <p>\$8,908,656 operating costs (including \$4,071,000 for the Derelict Mines Program (excluding Woodsreef))</p>
	<p>Governance arrangements:</p> <p>The Director Environmental Sustainability reports directly to the Executive Director</p>

Compliance and Enforcement.

Consultation strategy:

ESU is required to consult other agencies that are involved in aspects of the approval and regulation of the minerals and petroleum industries e.g., Department of Planning & Infrastructure, NSW Office of Water, Department of Primary Industries, the Environment Protection Authority.

The Program is also responsible for community liaison in relation to the roles and functions of the Program, including publication of all proposed and approved exploration activities across NSW.

Governance arrangements around a potential Mine Rehabilitation Advisory Council is pending establishment at the direction of the Minister to foster best practice mine rehabilitation and sustainable land use and to provide advice to the Minister on strategic rehabilitation issues in the mining industry.

Existing or proposed program pricing strategy:

The State Revenue and Other Legislation Amendment (Budget Measures) Act 2012 which commenced on 1 July 2012 introduced a new administrative levy on industry. The levy is expected to raise about \$14 million a year to fund additional staff so that Government can meet its increasing regulatory responsibilities. At this stage all of the Program's positions, current operating costs and the entire Derelict Mines program (\$4.07 million) are funded from the levy. Woodsreef derelict mine project is excluded.

In keeping with the cost recovery decision framework, government intervention is justified in order to overcome environmental externalities of unregulated mining activities. As such, a regulatory obligation exists to provide the Environmental Sustainability Program. In respect to the funding of this program, it is both efficient and cost effective to identify the risk creators (mining companies) and to elicit contribution at 'fully distributed cost' through a levy arrangement. This involves the salaries and on-costs, operating costs, an apportionment of full departmental overheads and a suitable return on assets. As such, the pathway through the cost recovery decision framework is represented as 1, 2b, 3, 4, 6, 7a, 10b, 11, 12, 13b, 15, recommending provision with cost recovery at fully distributed cost.

ESU operates on a 100% contingency basis with operational funding (excluding Woodsreef project) 100% hypothecated to the Administration Levy.

The ESU program is currently receiving approximately \$9 million (including all of the Derelict Mines program (\$4.07 million)) from the existing \$14,000,000 industry levy. This represents 64% of the total amount that should be recovered from industry. The Woodsreef derelict mines project, \$6.3million over the life of the project, is still being sourced from consolidated revenue.

Key performance measures:

Key performance measures are articulated to achieve effective environmental management of activities by the NSW minerals industry. The performance measures recognise the expansive nature of environmental management. They have been established to contribute to the achievement of the identified objectives and be

measurable.

Performance measures, in order to ensure currency and relevance, are subject to ongoing reviews. The performance measures developed by the department, reference the priority actions that are directly attributed to the delivery of NSW2021 Goal 1 – increase in the value of mining production by 30 per cent; Goal 4 - red tape reduction (increase the competitiveness of doing business in NSW) and Goal 22 – protect our natural environment. These output based performance measure and indicators, are supported by industry because the greater the frequency of these measures, the more likely that the department will achieve its identified outcomes.

The current measures for ESU are:

- 90% category 2 Surface Disturbance Notice (SDN) applications determined within 10 business days;
- 90% category 3 Review of Environmental Factors (REF) applications determined within 30 business days;
- 90% Mining Operations Plan (MOP) applications determined within 30 business days;
- 25% Environmental standards, policies and guidelines reviewed per annum;
- 50% of minerals titles audited for environmental performance;
- 45% of security deposits reviewed by June 2015;
- define and implement performance measures for Derelict Mines Program by June 2014;
- implement NSW Trade & Investment approved procurement approach to Derelict Mines Program by June 2014; and
- implement process of record keeping for the Derelict Mines Program by Nov 2014.

<p>Option 2.</p>	<p>Description:</p> <p>The Department would retain responsibility for:</p> <ol style="list-style-type: none"> 1. assessing applications and renewals for titles and drafting environmental title conditions; 2. assessing proposed activities and approving as appropriate; 3. collection function for security bonds; and 4. oversight of the Derelict Mines program. <p>Industry would be required to provide independent third party compliance audits on an annual basis for all exploration and production activities.</p> <p>An independent third party would be contracted by the Department to develop best practice environmental standards and undertake all enforcement activities in relation to environmental performance by industry.</p> <p>In part, a similar process is operated under the Environmental Planning and Assessment Act 1979 in respect to Certification of Development (Part 4A). Certification of development allows private sector operators to certify certain development processes, previously the domain of Local Government. The volume of all development (houses, shop fit outs, through to major commercial and industrial developments) across NSW facilitates use of appropriately qualified and audited private sector operators.</p> <hr/> <p>Resourcing requirements:</p> <p>10 in-house staff with an estimated total salary cost of \$1 million.</p> <p>Typical costs for environmental management specialists are in the region of between \$1500 to \$3000 per day. Currently some 960 man days are spent in the field by ESU staff undertaking compliance and inspection functions. These figures are projected to double due to increased resourcing via levy funding. Using existing resourcing as a basis, the minimum cost to undertake current functions would be in the region of \$2.8 million.</p> <p>One environmental standard reviewed and amended by a consultant recently cost approximately \$77,000. Currently there are some 20 policies and guidelines written and managed by this Department that apply to industry in relation to environmental performance in NSW. Maintaining the current review process would require the annual review of a minimum of seven policies and guidelines. This would lead to an estimated minimum expenditure of \$500,000 per annum. Again this assumes no additional or new requirements in terms of developing policies and guidelines.</p> <hr/> <p>Governance arrangements:</p> <p>The Director Environmental Sustainability reports directly to the Executive Director Compliance and Enforcement.</p> <hr/> <p>Consultation strategy:</p> <p>ESU would consult other agencies that are involved in the approval and planning processes for minerals eg, Planning & Infrastructure, NSW Office of Water, Department of Primary Industries, Environment Protection Authority. Authority for providing exploration activity and mine rehabilitation approvals would be transferred</p>
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to the Department of Planning and Infrastructure and/or Environment Protection Authority.

Proposed program pricing strategy:

Consolidated Revenue \$1 million for salaries, \$0.5 million for third party contract for standards development

Industry funding: \$2.8 million for contracted enforcement activities, \$4.07 million for Derelict Mines Program.

Key performance measures:

As stated for Option 1, output based KPI's, are supported by the department and industry as they deliver to *NSW2021* and focus achievement on identified outcomes. Key performance measures would equate to:

- 90% Category 2 Surface Disturbance Notice (SDN) applications determined within 10 business days
- 90% Category 3 Review of Environmental Factors (REF) applications determined within 30 business days
- 90% Mining Operations Plan (MOP) applications determined within business days
- 25% Environmental standards, policies and guidelines reviewed per annum
- 50% of minerals titles audited for environmental performance.
- 45% of security deposits reviewed by June 2014.
- Define and implement performance measures for Derelict Mines Program by June 2014
- Implement NSW Trade & Investment approved procurement approach to Derelict Mines Program by June 2014
- Implement process of record keeping for the Derelict Mines Program by Nov 2014

Step 3 – Options Assessment			
<i>Shortlist options by qualitatively listing below the benefits and costs of each option relative to the base case of 'no program'. If the program contains sub-components, it may be easier to consider the benefits and costs of each subcomponent.</i>			
	Benefits	Costs	Qualitative assessment of net impact
Option 1.	<ul style="list-style-type: none"> • Environmental benefits • Clear setting and application of standards for environmental performance. • Certainty for industry as standards are legally binding on industry. • Reduced risk of costs of rehabilitation falling on the community through the assessment and lodgement of bonds from the individual licence holder to cover the full cost of rehabilitation in case of default. • Reduced risk of catastrophic incidents due to regular checking of performance. • Clear visibility & accountability to the community of standards, assessment and performance. 	<ul style="list-style-type: none"> • High salary and operating costs for Government. • Costs imposed on industry due to delays in providing assessment and approvals for all activities. • Costs imposed on industry from the levy that funds most of the regulatory costs. • Costs imposed on specific firms through the recovery of costs associated with non-performance through imposition of fines and 'make good' provisions on individual firms. 	<p>Overall net benefit as the high level of certainty provided to the community in relation to environmental performance by industry, and reduced potential for liability for rehabilitation to fall upon the community and government, is assessed to exceed the costs.</p> <p>Benefits exceed costs.</p> <p>Ranking 1</p>
Option 2.	<ul style="list-style-type: none"> • Environmental benefits • Clear setting and application of standards for environmental performance. • Certainty for industry as standards are legally binding on industry. • Reduced risk of costs of rehabilitation falling on the community through the assessment and lodgement of bonds from the individual licence holder to cover the full cost of rehabilitation in case of default. 	<ul style="list-style-type: none"> • Costs to industry to meet reporting requirements (red tape) • High costs to industry and/or government associated with employing external industry professionals. • Potential undermining of program benefits by reliance on industry self-reporting of deficiencies and performance. • Delays in providing feedback in relation to ongoing environmental performance to industry and the community. • Potential environmental costs caused by delays in investigating breaches due to lack of qualified and available contractors. 	<p>Negative impact on community through a lesser focus on environmental performance by industry and lack of responsiveness to community concerns.</p> <p>Negative impact on industry due to increased reporting costs.</p> <p>Government policy and audit role still exists and thus unlikely to achieve a cost efficiency advantage over Option 1.</p> <p>Overall net impact could be positive or negative. Any net benefit would be lower than Option 1.</p> <p>Ranking 2</p>

		<ul style="list-style-type: none"> • Reduced mining rehabilitation capability by government. • Development, operation and ongoing audit of a third party accredited auditor scheme • Reduced community accountability 	
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Evaluation of options

The preferred option is the current Environmental Sustainability Program (option 1) as it provides a high level of certainty to the community in relation to environmental performance by industry, and is assessed as providing a net benefit. A third party assurance based program (option 2) provides less certainty to the community about the environmental performance of industry, results in additional reporting by industry and associated red tape costs, and may result in a net cost. Given current community concerns, Option 1 brings with it the benefit of facilitating greater accountability to the community through known channels.

A third party assurance based program (option 2) provides less certainty to the community about the environmental performance of industry, results in additional reporting by industry and associated red tape costs, and may result in a net cost. It necessitates the development of a legislated third party certification processes and ongoing monitoring and evaluation. It does not alleviate the need for the setting and reviewing of policies and guidelines. Feedback loops between policy and operational outcomes are lessened and become more remote. In turn, the responsiveness to need is delayed, translating to increased costs to implement sound environmental practices and achieve strong environmental performance.

Appendix A: Cost Recovery Decision Framework

