South Australian Productivity Commission

Draft Report

Extractives Industry Supply Chain Review

23 June 2020

Disclaimer

The views expressed herein are those of the South Australian Productivity Commission and do not purport to represent the position of the Government of South Australia. The content of this draft report is provided for information purposes only. Neither the South Australian Productivity Commission nor the Government of South Australia accepts any liability to any person for the information (or the use of such information) which is provided in this draft report or incorporated into it by reference. The information in this draft report is provided on the basis that all persons having access to this draft report undertake responsibility for assessing the relevance and accuracy of its content.

South Australian Productivity Commission
GPO Box 2343
Adelaide South Australia 5001
AUSTRALIA

Telephone: 08 8226 7828
Email: sapc@sa.gov.au
Website: www.sapc.sa.gov.au

An appropriate citation for this publication is:

South Australian Productivity Commission, *Extractives Industry Supply Chain Review*, Draft Report, June 2020.

About the South Australian Productivity Commission

The Commission provides the South Australian Government with independent advice on facilitating productivity growth, unlocking new economic opportunities, supporting job creation and removing existing regulatory barriers.

Premier and Cabinet Circular PC046 sets out the objectives and functions of the Commission; how inquiries are referred to the Commission, undertaken and reported on; and how the Commission and public sector agencies work together.

The Commission was established to assist the government to:

- improve the rate of economic growth and the productivity of the South Australian economy in order to achieve higher living standards for South Australians;
- improve the accessibility, efficiency and quality of services delivered or funded by government;
- improve South Australia's competitiveness for private sector investment;
- reduce the cost of regulation;
- facilitate structural economic changes while minimising the social and economic hardship that may result from those changes;
- take into account the interests of industries, employees, consumers and the community;
- increase employment;
- promote regional development; and
- develop South Australia in a way that is ecologically sustainable.

The Commission is supported by the Office of the South Australian Productivity Commission (OSAPC) which is an attached office of the Department of the Premier and Cabinet. The Chair of the Commission also serves as the Chief Executive of the OSAPC.

For more information on the Commission, including Circular PC046, visit the website at www.sapc.sa.gov.au.

Disclosure

The Commissioners have declared to the South Australian Government all personal interests that could have a bearing on current and future work. The Commissioners confirm their belief that they have no personal conflicts in regard to this inquiry.

Terms of reference

SOUTH AUSTRALIAN PRODUCTIVITY COMMISSION REVIEW INTO INSTITUTIONAL ARRANGEMENTS TO MANAGE REGULATORY BURDEN – EXTRACTIVES SUPPLY CHAIN

I, Steven Marshall, Premier, hereby request that the South Australian Productivity Commission (the Commission) undertake a review into institutional arrangements to manage regulatory burden focussing on the extractives supply chain.

Background

The construction sector is a significant employer and economic driver the state.
The construction sector employed 74,700 people (or 8.8% of total employment in the state) as at August 2019, and in 2018-19 the construction sector accounted for 7.9% of the state's total industry gross value - the third highest contributor to the state's economy. The South Australian government is investing $11.9 billion in infrastructure spending over the next four years, which will provide valuable community assets, drive economic growth and provide jobs for South Australians.
The extractives industry is a vital component to the provision of construction and heavy construction materials to infrastructure and building projects across South Australia.
The sector includes hard rock, sand and gravel extraction operations and secondary processing.

The ability to develop extractive resources close to infrastructure and construction projects across South Australia in a strategic manner significantly contributes to:

- cost and time efficiencies and improved tender mobilisation for major construction and infrastructure projects
- reducing transport costs
- improving the ability of quarry companies to tender with greater confidence, and to mobilise more effectively to respond to demand.

Terms of Reference

The Commission is to evaluate the effectiveness and efficiency of State and local government regulation, policies and practices for the extractives supply chain and identify reform options to improve the efficiency of regulation on the extractives industry – and broader construction industry to enhance output and employment.

The Commission is asked to consider and report on the following matters:

1. The current regulatory framework for quarry and extractive industry development in South Australia, including:
   a. processes for determining/approving location, and any restrictions that may exist
   b. timeframes for current processes
   c. costs for businesses
   d. closure arrangements and post closure land use.

2. Regulatory, planning and other barriers to strategic development of quarries located near significant infrastructure opportunities.

And make recommendations on:

3. Actions to improve the efficiency and effectiveness of supply of extractives-based inputs into strategic infrastructure and construction projects, and the efficient and effective establishment of related quarries across South Australia.

4. Better regulatory and non-regulatory options for more expedited assessment and approvals for high performing members of the sector thereby creating a more competitive environment.

5. Any other relevant matters.

Scope

The Commission should have regard to relevant local, state and federal legislation and regulation.

Process

The Commission is to consult with stakeholders, including: businesses operating in South Australia; relevant business associations and industry groups (such as Cement, Concrete and Aggregates Australia and the Institute of Quarrying Australia); the Department of Planning, Transport and Infrastructure; the Department of Energy and Mining; the Industry Advocate; Local Government Association; and the State Procurement Board.

The Commission is to issue a draft report outlining recommendations for consultative purposes. A final report is to be provided to me as soon as possible, but not later than six months after receipt of these terms of reference.

Hon Steven Marshall MP

PREMIER OF SOUTH AUSTRALIA

3 /2 / 2020

Contents

Key messages

The extractive minerals industry provides essential materials for the construction industry and for state infrastructure. The Commission's task has been to evaluate and identify streamlining opportunities in the approvals process for quarries, and in the use of their outputs in construction and elsewhere, without compromising other government objectives.

The regulatory framework for extractives industry combines a lead regulator framework for pre-operational approvals, led by the Department for Energy and Mining (DEM), and a co-regulation framework during the operational stage of quarries. Significant improvements can be made in both frameworks without changing legislation. Other draft recommendations build on existing reforms, namely the implementation of discrete aspects of state planning reforms and the delayed explosives regulation reform.

The extractive regulatory framework illustrates some wider issues for significant regulatory reform that would lift employment, investment and productivity.

The distance that extractives outputs must be transported greatly affects their cost and the cost of infrastructure. Adelaide, among Australian capital cities, has its highest production quarries located within the greater metropolitan area. This proximity to other sensitive land uses also creates tensions from neighbourhood and amenity effects such noise, air quality and truck movements.

Current regulatory processes reconcile these competing interests with insufficient regard to the state's ownership of extractive resources. Whilst other extractives resources are available, they result in higher transport costs and impact on roads. The Commission sees scope to strengthen the State's interests in the regulatory processes, without compromising the assessment of the 'best' use of the land containing extractive resources.

DEM is generally well-regarded as a regulator by industry, which also identifies improvements possibilities. The Commission sees there are opportunities for regulatory improvement in:

- strengthening and streamlining DEM's lead role in approvals including by further risk-based triage, allocating the relevant resources and considering a code of practice model by DEM and the industry; and
- adopting a hybrid lead regulator/co-ordinated co-regulator approach for the operational phase, enabled in part by adopting contemporary environmental standards that provide quarry operators with greater consistency among regulators.

The Commission sees merit in providing protections to strategic extractive mineral areas in the state's planning system. The Commission notes the state planning reforms are addressing these issues, but that the new Resource Extraction Protection Overlay may not be applied around urban quarries in the first instance.

There are also opportunities to optimise quarry locations with budgetary benefits to the state, especially outside the metropolitan area, through more flexible approaches to pre-qualification of quarry outputs and early notification of infrastructure plans.

The Commission also sees opportunities to improve regulatory arrangements for ongoing rehabilitation, eventual closure and subsequent land use.

The final report is due to the Premier on 28 August 2020.

Executive summary

This draft report sets out the Commission's understanding of the issues affecting the regulation, policies and practices impacting on the extractives industry supply chain and makes draft recommendations to improve the effectiveness and efficiency of those arrangements. Some additional information is also requested.

The Commission has consulted with the extractive industry in South Australia (SA), key regulatory authorities, and other stakeholders. The Commission has engaged with 32 different organisations and held 43 separate meetings of which 49 per cent were with businesses or business associations. Of those businesses that were consulted, 73 per cent were small to medium enterprises. Given social distancing requirements only one site visit was conducted and 67 per cent of engagements were via telephone or video conference. The Commission received 10 public submissions in response to its issues paper that are available on its website and listed in Appendix 1. The Commission will consult with stakeholders and participants on the draft report to improve the recommendations to be made in the final report.

Notwithstanding the review's confined scope, it has identified some wider issues about how the state approaches regulation, particularly in areas of co-regulation where industry is governed by highly interdependent regulation. These issues generally relate to the perspective and practices adopted by regulators and how they coordinate and pursue their mandates. Regulatory design could be improved in some cases.

The South Australian extractives industry

Extractive minerals are quarried across (SA), with most of the strategically significant sites located in and around the greater metropolitan area of Adelaide. Other major quarry clusters are found on the northern coasts of the two gulfs, Fleurieu Peninsula and in the far South East. Around one-quarter of mineral tenements are extractive mineral leases.

The extractive mineral industry across Australia is largely made up of smaller operators, with relatively few companies employing over 200 employees. Industry has indicated that the larger companies account for most of SA's production of extractives.

Life cycle and supply chain

The development and exploitation of a quarry goes through defined stages of a life cycle: discovery; development and investment approval; planning, building and operation; and rehabilitation and closure. Investment decisions occur at each stage. The level of risk to the business tends to fall as the quarry moves through the stages. The supply chain involves the extraction of raw materials and various degrees of processing followed by delivery to customers. The material tends to have low unit values, so that transport costs are a significant proportion of the delivered cost.

Government decisions

Extractives activity involves three areas of high-level decisions by the state's regulatory system:

- Deciding the initial land use – extractives production or an alternative use – having regard to the various public interests, for example, in using geographically fixed resources to build infrastructure and in housing an expanding population.

- Deciding the subsequent operating conditions for an approved quarry, having regard to the local impact on its neighbours and other state-level objectives.
- Deciding the subsequent land use post extractives, which affects the quality of the closure in the final stages of the operating phase, while ensuring the state's exposure to the legacy of poor decisions is limited to an acceptable level.

Quarrying and other neighbourhood interests in extractives operations

Quarry operations and supply chain activity are governed by several regulators to address the various public interests associated with the neighbourhood effects (e.g. noise and air quality, truck movements). These effects can have an impact on the well-being of members of the local community and are not measured as part of the costs of production. To ensure these effects are taken into account, regulations, policies and other tools are applied.

Quarry rehabilitation and closure raises other issues. The failure to rehabilitate imposes costs on the community to ensure constructive post-closure land use. Arrangements are in place to indemnify government against these potential liabilities, but there appears to be some confusion within industry about how these arrangements are discharged and the changes in quarry rehabilitation policy over time.

State interests in the location of extractives activities

The Commission heard that Adelaide is uniquely placed compared to other Australian capital cities as most of its highest production quarries are located within the greater metropolitan area. This proximity to metropolitan infrastructure projects is a competitive advantage as it minimises the highest proportion of construction material costs – transport. Over time urban sprawl has seen other interests taking up land, and where these interests occupy land adjacent to quarries tensions are created. Pressure from competing interests and regulatory processes could result in the closure of a quarry earlier than would otherwise be the case. Whilst other extractives resources are available, they are more distant, which increases transport costs. Conversely, if the quarry is not closed, housing and other infrastructure (e.g. pipelines) must occupy less preferable locations.

The regulatory process and its performance

While there is a one-door-to-government arrangement for extractives, there are in practice two systems. The Department for Energy and Mining (DEM) is the lead agency for extractives and is responsible for mining approvals and some performance. During a quarry's operational phase, the regulatory model moves from lead regulator to co-regulation, in which several regulators must discharge statutorily established mandates and powers covering quarry operations and supply chain activity. Where these mandates overlap, the Commission currently observes unnecessary inefficiencies such as delays, excessive complexity, additional cost and inefficient approaches to risk.

A better balance is required to maintain environmental and safety standards while minimising delays in processing applications that can otherwise lead to lost commercial opportunities and investment in SA. Industry raised several issues about the time it takes to obtain the necessary approval to quarry. Achieving target timeframes only around half the time is considered unsatisfactory, suggesting the need for a range of actions to improve this situation. The timeframes to obtain mining approval and quarry pre-qualification and to participate in tendering opportunities can also be misaligned.

Causes for these issues lie at several levels: different decision-making systems, staff skills, expectations and cultures. Opportunities for improvement include clarifying competing interests and the principles for reconciling them, improved interrelationships between regulators and coordinating their interests in the extractives industry, and aligning regulatory processes to achieve a result that best represents the state's interests overall.

The Commission evaluated the most prominent issues in the mining assessment process raised by industry and quarry operators, which relate to:

- the extent and proportionality of information regulators require from applicants to support the assessment process;
- inconsistency in the treatment of applications;
- public consultation requirements and balancing social licence with quarry significance; and
- process or procedural delays in progressing applications.

With respect to operations, following the assessment phase, the Commission identified several opportunities to improve how quarry operations and supply chain activity are regulated. These issues pertain to the interplay between the co-regulators – DEM and other regulators responsible for environmental regulation and licensing of quarry activities, access to the road network and the productivity of transporting construction materials, and storing and deploying explosives. There are also issues concerning the pre-qualification of quarries for tenders related to government infrastructure projects.

Quarry closure and post completion land use: achieving fit-for-purpose outcomes

The level of prescription required in rehabilitation plans forming part of the mining approval, has been raised as being potentially disproportionate. Operators have expressed concern about the amount of information and specificity required in quarry operating plans regarding rehabilitation, particularly for large metropolitan quarries with very long operational lives. This can also create compliance issues. Whilst the operational and cost benefits of rehabilitating a quarry progressively are generally accepted, the onerous information requirements can increase the cost of operations and unnecessarily delay an approval.

There is a clear state and community interest in ensuring quarry land is usable in the future. That use is dependent on the extent and quality of rehabilitation that has occurred, and where it has not occurred the costs are borne by the state. A fund has been established to indemnify the state against that risk and associated costs; there is scope to clarify the purpose of the fund and avoid unintended policy outcomes.

Proximity to competing or alternative land uses

There have been several inquiries and policy and other responses over the last six years in response to issues of proximity, incompatible land use and quarries in South Australia. The new Planning and Design Code being progressively implemented under the state's planning reforms includes a new referral to DEM for development applications proposing development within 500 metres of existing mining tenements. Further, a Resource Extraction Zone and a Resource Extraction Protection Overlay are being introduced to protect current and future state significant extractives resources and activities.

Towards a better regulatory framework

The quarry sector involves the interests of many parties, including quarry companies and their private and public customers, such as infrastructure providers, and their users. Other transport network users, local residents and taxpayers all have interests in the establishment and operations of quarries. If the value received and perceived to be associated with this sector is to be maximised, all the interests involved have to be taken into account and reconciled. This involves a complex set of regulatory processes, the structure and operations of which vary between stages along the value chain of the industry.

The answer is not an addition to the proliferation of agencies to resolve this issue, by creating an overarching body, but to:

- clarify the interests of proponents, opponents and the people of South Australia and the principles for reconciling them;
- establish a mechanism for the interaction of the existing set of agencies and the interests on which they are focused, as a market would do;
- simplify and clarify the regulatory task of each agency; and
- viewed through the lens of the state's interests, align the regulatory processes to achieve the best result in the shortest time.

The recommendations here are directed to these goals.

Summary of draft recommendations & information requests

Draft recommendation 4.1: Pre-lodgement review

To support efficiencies in the quarry impact assessment process, minimise rework and provide greater transparency and accountability, the Department for Energy and Mining (DEM) provide an optional pre-lodgement process for quarry extractive mineral lease, Program for Environment, Protection and Rehabilitation and Mine Operation Plan applications modelled on the arrangements for fast-track pre-lodgement approvals in the planning system, noting, among other requirements, the need for:

- early and reliable identification of critical issues by DEM and referral authorities at the start of the process;
- a standard of no more than one further request for information;
- timeframes for assessment and response to be met by DEM and referral authorities; and
- proportionality in the requirements identified in the pre-lodgement meeting.

The performance of revised pre-lodgement arrangements be measured and reported on to determine the extent of net benefit over time, and to identify any potential further improvements in that process.

Draft recommendation 4.2: Set and report target timelines for approval and publicly report performance against those targets

In order to raise the productivity of the regulatory process, the Department for Energy and Mining (DEM) adopt a new target setting and reporting process for timelines for approvals and reviews in the DEM-led process that:

- starts with the current targets but adopt goals for further reductions over 3 years;
- incorporates and reports on this key performance indicator of the agency; and
- makes DEM accountable for the internal organisation arrangements and changes, including workflows, that are needed to reach those goals.

Draft recommendation 4.3: Formalising referral arrangements between regulators

To increase regulatory efficiency for extractive mineral impact assessments and minimise the risks associated with a duplication of responsibility, the Department for Energy and Mining and all relevant referral agencies put in place formal administrative arrangements, authorised by relevant agency Chief Executives, that:

- clarify each agency's regulatory mandate and areas of responsibility;
- specify how areas of joint responsibility will be managed with one lead regulator;
- specify the decision required from each regulator, with the principle of requiring no more information from a proponent than is necessary to reach that decision;

- provide timeframes for completing referrals, after which if there is no response then the proposal is deemed to comply;
- provide a procedure to escalate matters quickly to the final decision maker where regulator delegates are unable to resolve any tensions in areas of responsibility impacting on the progress of an impact assessment application; and
- specify the frequency of reviewing and updating the administrative arrangement.

A key underpinning principle of the arrangements is to balance a proportionate level of prescription to support practical and expedited referral activity with retaining delegates' ability to exercise transparent professional discretion under their respective mandate.

Draft recommendation 4.4: Establish a streamlined option for quarry product pre-qualification

In order to reduce delays in the pre-qualification process, the Department of Planning, Transport and Infrastructure:

- allow extractives proponents to:
    - contract out testing to approved private laboratories; and
    - have the option of proving either that materials meet specifications of shape, strength, form etc or else that materials available meet performance standards in use; and
- create the option for accepting a tender pending pre-qualification.

Draft recommendation 5.1: Updating environmental programs

In order to support improved environmental outcomes, to provide for a more uniform and consistent approach for quarry operators, and to decrease the requirement for co-regulators to intervene in relation to quarry operations, the Department for Energy and Mining audit the environmental programs applicable to all quarries in South Australia to determine environmental programs that require updating.

To manage the impact on the regulator's resources, and in consideration of the potential impact on industry, the audits of environmental programs be prioritised on a risk-based approach, with attention to considerations such as existing proximity issues, complex environmental factors and low risk locations.

Draft recommendation 5.2: Delegations

To further improve the performance of co-regulation during the operations phase of quarries, other agencies with statutory responsibility for environmental performance linked to quarrying establish risk-based administrative arrangements with the Department for Energy and Mining for the latter to act as their delegate:

- implementing, for simple cases as determined by co-regulators, contemporary standards set by those co-regulators;
- while referring to the co-regulator all other cases;
- these changes would have the effect of creating a hybrid lead regulator model / coordinated co-regulation model for the operations phase of quarries.

Draft recommendation 5.3: First and last mile access improvements

To support productivity gains by using more efficient heavy vehicles to transport construction materials on parts of the road network where their access is not currently authorised, the Minister for Energy and Mining and the Minister for Transport establish a joint industry/government partnership in the spirit of the *Improving Road Transport for Primary Production* project to:

- identify all known first and last mile road access locations used to transport extractive minerals, including access to/from established and proposed metropolitan and major regional quarries, and fixed end-user locations such as batch plants;
- determine the extent to which the State Planning Policy and the current transport-related overlay proposals address identified first and last mile issues; and
- the partnership approach to be inclusive and consultative including quarry industry representation, quarry operators, transport industry representation, local government representation (including key councils), community representation and other regulators with relevant mandates such as the Environmental Protection Authority.

The project is to recommend proposed road network access reforms, based on a cost/benefit analysis, for action by the State.

Draft recommendation 5.4: Prioritising road network upgrades to optimise the extractive mineral supply chain

To increase efficiencies for transport users, and obtain cost savings to government in relation to building and maintaining state infrastructure, the Department of Planning, Transport and Infrastructure incorporate in the business cases for road network infrastructure the benefits from efficiencies in transporting extractive minerals across the state and from optimising the geographic sourcing of those resources.

Draft recommendation 5.5: Prioritising the reform of explosives regulation in South Australia

In support of efficiency in the sourcing and deployment of explosives across the South Australian extractive minerals industry, and in furtherance of the work of the explosives regulation reform Council of Australian Governments Strategic Issues Group, SafeWork SA and the Treasurer:

- complete the reform of the *Explosives Act 1936* (SA) and associated regulations within six months;
- evaluate SafeWork SA's existing standards, practices and administrative arrangements against accepted industry codes and standards and adopt industry better or best practice in Australian jurisdictions for the regulation of explosives within 12 months; and
- consult with industry representatives, quarry operators, state and national regulators and other stakeholders on these matters and publish the outcomes of those consultations on SafeWork SA's website.

Draft recommendation 5.6: Joint review of the Extractive Areas Rehabilitation Fund

To promote transparency and a shared understanding of the purpose and application of the Extractive Areas Rehabilitation Fund (EARF), the Department for Energy and Mining (DEM) and representatives from industry and key co-regulators should jointly review the EARF to:

- clarify the purpose of the EARF within the context of modern expectations around progressive rehabilitation;
- review the results of an actuarial analysis of extractive sites that was recently undertaken by DEM and consider the impact that modern progressive rehabilitation practices will have on the potential future rehabilitation liability of the government and community;
- increase the transparency and accountability for the funding arrangements that finance the EARF;
- determine an agreed set of criteria that can be used to expend funds from the EARF; and
- assess governance arrangements for the administration of the EARF.

Draft recommendation 5.7: Implementing Resource Extraction Protection Overlays in metropolitan areas

To make progress on the operation of overlays relevant to the extractives sector, the Department of Planning, Transport and Infrastructure, in conjunction with the Department for Energy and Mining (DEM), design and implement a methodology for establishing Resource Extraction Protection Overlays, beginning with three major quarries in the Adelaide area, in preparation for the final phase of implementation of the Planning and Design Code, noting the new principles for public consultation.

In addition, DEM work with the Geological Survey of South Australia to update the Strategic Resource Areas for extractives and adopt them in the new planning system.

Information request 2.1: Data analysis validation

To what extent is the Commission's analysis and conclusions regarding processing times a reasonable depiction of trends in processing times over the period 2014-15 to 2018-19? What other considerations are appropriate?

Information request 4.1: Proportional low-risk quarry approvals

Industry feedback suggests there is scope to consider further enhancements to the defined impact assessment initiative, particularly in relation to short-life, fixed-term and campaign-type quarry operations that support regional infrastructure projects. The Commission invites further feedback regarding:

- implications for the adoption of a code of practice for low risk quarries in SA;
- expanding the current eligibility criteria enabling the use of defined impact templates; and
- further streamlining of the defined impact assessment process.

Information request 4.2: Public consultation

The Commission considers current arrangements for public consultation on extractive mining proposals can be improved, including by guidelines for public consultation clarifying:

- when consultation is appropriate;
- who has standing in the consultation, such as people and businesses directly affected by the proponent's proposal; and
- principles and standards for consultation.

The Commission seeks views on this matter and on approaches to best practice consultation.

Information request 5.1: Native vegetation offsetting requirement and commercial impacts on quarry operations

Industry indicated that the costs associated with the requirement to provide significant environmental benefit (SEB) to offset the impacts of clearance activity can act as a commercial barrier to establishing or expanding quarry operations. The Commission invites further detailed feedback to get a better understanding about the number of quarries that have been affected by the SEB requirement and the volume of extractive mineral resources that have become commercially unviable to quarry as a result.

Information request 5.2: Modified road network access for extractive mineral transport

The Commission seeks more information to quantify the potential productivity gains that could come from use of more efficient vehicles to transport construction materials on parts of the road network where their access is not currently authorised.

What process would be required to assess and potentially establish a modified road network access scheme for the transportation of extractive minerals in South Australia based on the principles that underpin South Australia's commodity routes?

Information request 6.1: Alternatives to rules-based regulation

The Commission is interested in hearing from stakeholders on how alternatives to government rules-based regulation could address externalities arising in the quarrying process. Quantifying the cost of externalities to determine the extent of intervention required is also of interest.

Examples to consider may include addressing information asymmetry in the market, self-regulation, and market-based incentives, particularly when they are connected to achieving a social licence to operate.

Definitions

The following list of definitions apply for the purposes of this review.

Closure	A whole-of-mine process culminating in lease surrender (mine completion). Includes all activities (studies, modelling, field trials) involved with the development and implementation of closure strategies (decommissioning and rehabilitation).[1]
Co-regulator	Those South Australian Government agencies that hold mandates to regulate activities or externalities that arise from quarry operations and supply chain activities.[2]
Environment	The *Mining Act 1971* provides two definitions for 'environment': • s 6(4) defines environment as including: land, air, water, organisms, ecosystem, native fauna and other natural environment features; buildings, structures and other forms of infrastructure; cultural artefacts; existing or permissible land use; public health, safety or amenity; geological heritage values of an area; and the aesthetic or cultural values of an area; and • s 73C(1) defines environment for the purposes of private mines as land, air, water, organisms and ecosystems, and includes human-made or modified structures or areas.[3]
Extractive minerals	Sand, gravel, stone, shell, shale or clay, when used generally for construction purposes but excluding those materials if they are used for industrial, agricultural and ornamental purposes. Some types of clay (fireclay, bentonite or kaolin) are excluded from the definition of extractive minerals.[4]
Extractive mineral lease	A class of mining lease under the *Mining Act 1971* that must be obtained before the holder has the exclusive right to mine for, and sell, extractive minerals as given on the SA Mineral Commodity List.
Extractive mineral industry supply chain	The series of steps involved in the discovery and delivery of extractive mineral commodities to infrastructure projects – from exploration to production to rehabilitation and closure, and inclusive of key activities, commercial investment decisions and regulatory approval gateways.
Mine Operation Plan	Section 73G(1) of the *Mining Act 1971* prescribes that, unless otherwise approved, a person must not carry out mining operations at a private mine unless a mine operations plan that

[1] DEM, *Development of environmental outcomes for quarrying and mining, Minerals Regulatory Guidelines MG30* (2020) 21. (MG30)
[2] An agency can be both a referral agency and a co-regulator agency depending on whether their involvement is captured as part of the referral process led by DEM (referral agency) or is outside of that process but still necessary for a quarry operator to establish, operate, supply and close a quarry (co-regulator agency).
[3] The *Statutes Amendment (Mineral Resources) Act 2019* amends the definition of environment that applies to private mines to be more consistent with the general definition except for aesthetic or cultural value.
[4] *Mining Act 1971* s6(1). (Mining Act)

	relates to the operations and complies with requirements of section 73G is in place following assessment by DEM.
Mineral claim	Provides an exclusive right to prospect for minerals within the claim area for 12 months, and to apply for a mining lease over all or a portion of the claim.
Mining proposal	Must be included to support an application for an EML and must be prepared in accordance with the relevant ministerial determinations and regulatory guidelines.
Mining tenement (tenement)	A claim, lease or licence under the *Mining Act 1971* including: mineral claim; exploration licence; mining lease; retention lease; miscellaneous purposes licence.[5]
Ministerial determination	Enforceable determinations issued by the relevant minister in accordance with the *Mining Regulations 2011*, regs 30(3) and 49(3), which specify the mandatory minimum information requirements for an application or assessment to be deemed valid.
Private mine	An area that met certain conditions and was proclaimed by the Governor of SA to be a private mine following the commencement of the *Mining Act 1971*. PMs are subject to the provisions of part 11B and exempt from the rest of the Act.
Program for Environment, Protection and Rehabilitation	The operational approval that a tenement holder must obtain from DEM in order to carry out mining operations. The PEPR must comply with the requirements set out in part 10A of the *Mining Act 1971*.
Proponent/operator	For the purposes of this review, the proponent is the individual or company operating the quarry which seeks approval to establish, vary or close operations at a particular quarry site.
Quarry/quarrying	A quarry is a cutting, pit or mine site from which extractive minerals for construction purposes are removed. Quarrying is the process of removing rock, sand, gravel and other minerals from the ground to produce products used in the construction industry. Quarrying operations include activities to explore and rehabilitate the mined land.
Referral agency	Those SA Government agencies that provide expert advice as part of the DEM-led extractive mining application and assessment processes (see also Co-regulator).
Rehabilitation	The return of disturbed land to a state agreed by relevant stakeholders and defined in the PEPR.[6]
Royalty	Section 17(1) prescribes that, subject to the *Mining Act 1971*, a royalty is payable to the Crown on all minerals recovered from

[5] DEM, *Establishing and registering a mineral claim in South Australia, Minerals Regulatory Guidelines, MG24* (2017) 30. (MG24)
[6] MG30 (n 1) 24.

	mineral land and: are sold or intended for sale; or utilised, or to be utilised, for any commercial or industrial purpose.
Significant environment benefit	The scheme that gives effect to biodiversity offsetting principles requiring an action resulting in a net environmental benefit following the clearance of native vegetation.[7]
Social licence to operate	The development and maintenance of ongoing acceptance of a project by the community and other important stakeholders.[8]
Strategic Resource Area	An area identified in the Greater Adelaide region as being an area of key economic value to SA due to the quantity or quality of construction materials or mineral resources that are extracted or contained within the area, and is currently experiencing, or likely to experience, urban encroachment or incompatible development interfaces in the near future.[9]

[7] Department for Environment and Water, *Offsetting* (web page, 28 May 2020) <https://www.environment.sa.gov.au/topics/native-vegetation/offsetting>
[8] Australian Productivity Commission, *Resources Sector Regulation Draft Report* (2020) 4. (Australian Productivity Commission)
[9] Department of State Development, *Identification of strategic mineral resource areas in South Australia – Greater Adelaide region and major regional centres* (Report, 2015) 10. (SRA Report)

Acronyms

ABS	Australian Bureau of Statistics
AEISG	Australasian Explosives Industry Safety Group
CCAA	Cement Concrete and Aggregates Australia
CPI	Consumer Price Index
DEM	Department for Energy and Mining
DEW	Department for Environment and Water
DIT	Defined impact template
DPC	Department of the Premier and Cabinet
DPTI	Department of Planning, Transport and Infrastructure
EARF	Extractive Areas Rehabilitation Fund
EML	Extractive mineral lease
EPA	Environment Protection Authority (SA)
HVNL	Heavy Vehicle National Law
LPMA	Leading Practice Mining Acts
MC	Mineral claim
MD	Ministerial determination
MOP	Mine Operation Plan
MRD	Minerals Resource Division (in DEM)
NHVR	National Heavy Vehicle Regulator
PAP	Project Assessment Panel
PDI	Planning, Development and Infrastructure
PEPR	Program for Environment, Protection and Rehabilitation
PM	Private mine
RAMP	Resource Area Management and Planning
RAV	Restricted Access Vehicles
RFI	Request for information
SAFC	South Australian Freight Council
SARIG	South Australian Resources Industry Geoserver
SEB	Significant environmental benefit
SPP	State Planning Policy

SRA	Strategic Resource Area
SWSA	SafeWork SA
TRC	Tenement Review Committee

1. The extractives industry supply chain

1.1 Introduction

This inquiry evaluates the effectiveness and efficiency of state and local government regulation, policies and practices for the extractives supply chain and proposes reform options to improve the efficiency of regulation on the extractives industry and the broader construction industry. The broad purpose is to lift output and jobs for South Australia (SA), without compromising other government objectives.

The narrow focus of this review notwithstanding, the extractives industry and its regulation illustrate some key wider issues for the state regarding the underlying principles of and approach to regulation (especially the efficient and effective synthesis of a range of apparently opposing public interests), efficient regulatory design and highly productive regulatory services. Few of the conclusions the Commission has reached call for any change to regulation, let alone legislation. Compared with some other Australian jurisdictions, South Australia has – according to contributors to the inquiry – a well-respected lead regulator in the Department for Energy and Mining, supported by arrangements with other regulators that together provide a robust regulatory infrastructure.

That said, the Commission concludes in this draft report:

- There are significant opportunities to improve the operating efficiency of this regulatory framework to the benefit of South Australians, importantly in simplifying interdependencies among co-regulators. This is mainly a matter of how regulators work together to discharge their mandates having regard to the broad public interest in jobs, growth and productivity without compromising other public interests.
- An important matter is the currently poor articulation between the planning system and the mining/extractives regulatory regime, which will be addressed to some extent by imminent reforms to the planning system.
- There is a major gap in the foundations of the current arrangements leading to South Australians not being compensated for the premature sterilisation of location-specific extractives resources that are used by the construction industry. As a result, the state and its citizens forego such unused resources without compensation for the foregone royalties and for the higher costs of state infrastructure because more distant, more costly resources are substituted.

This introductory chapter sets out:

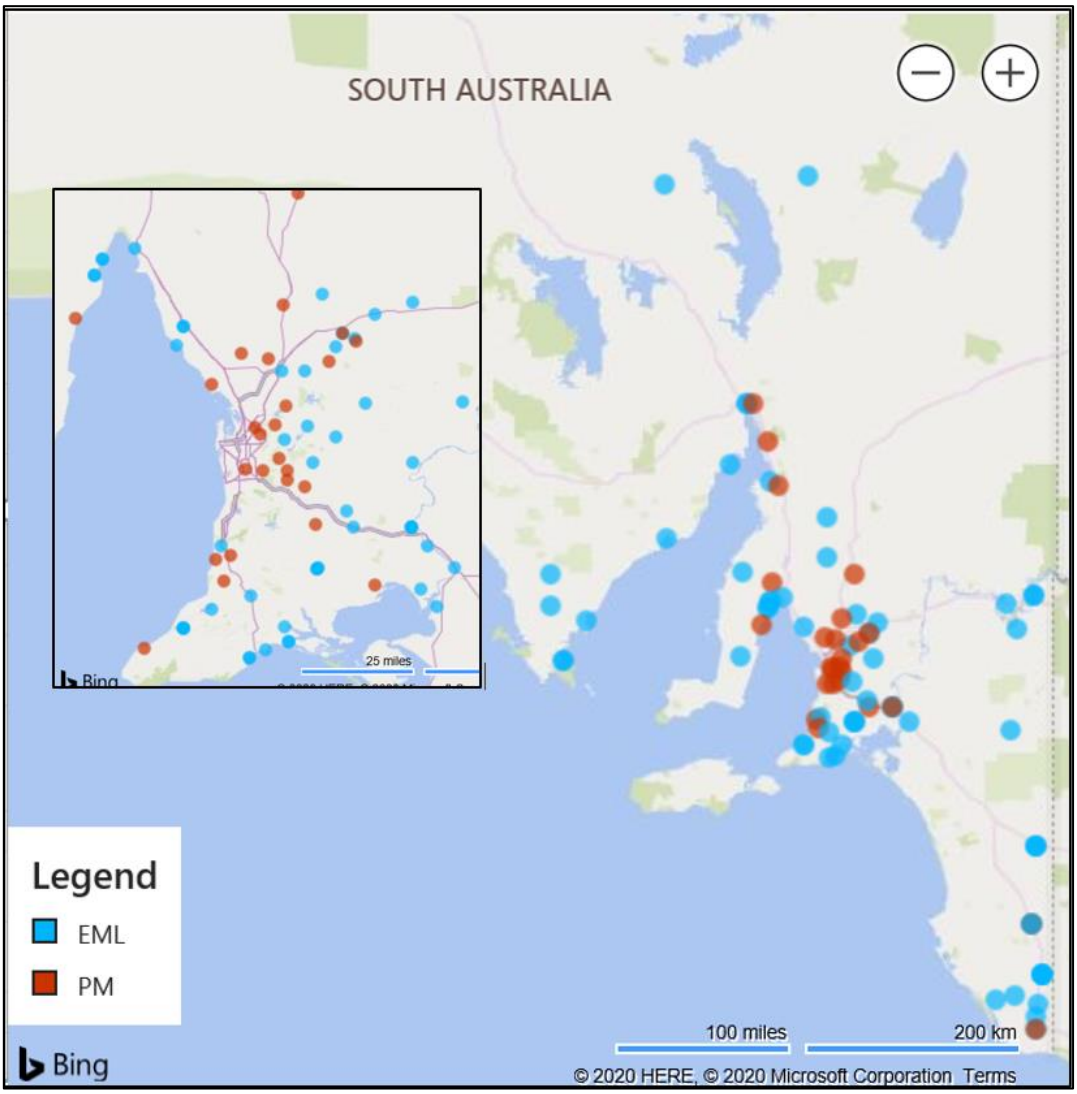
- a summary of the industry in terms of its value, economic contribution and distribution across the state (Section 1.2);
- a synopsis of the interaction between the life cycle, value chain and regulatory framework governing the industry, including intersections with other regulatory systems – state, local government and Commonwealth (Section 1.3);
- a perspective on the key public interests that the regulatory framework is addressing, including what economists describe as a missing market that mediates between the interests of South Australians as a whole, communities and a range of private interests (Section 1.4).

1.2 The South Australian extractives industry

This section provides an overview of the extractive minerals industry in SA based on available information. Extractives comprise sand, gravel, stone, shell, shale or clay, when used generally for construction purposes but excluding those materials if they are used for industrial, agricultural and ornamental purposes. Some types of clay (fireclay, bentonite or kaolin) are excluded from the definition of extractive minerals.[10]

Map 1.1 shows the location of the top 100 extractive mineral sites in SA by production reported to the Department for Energy and Mining (DEM) for 2019 for royalty purposes. Extractive mineral leases (EML) tenements and private mines (PM) are the two types of quarries regulated under the *Mining Act 1971* and are explained in Section 2.1.2.

Map 1.1: Location of larger operational extractive mineral sites (extractive mineral lease tenements and private mines) in SA, 2019



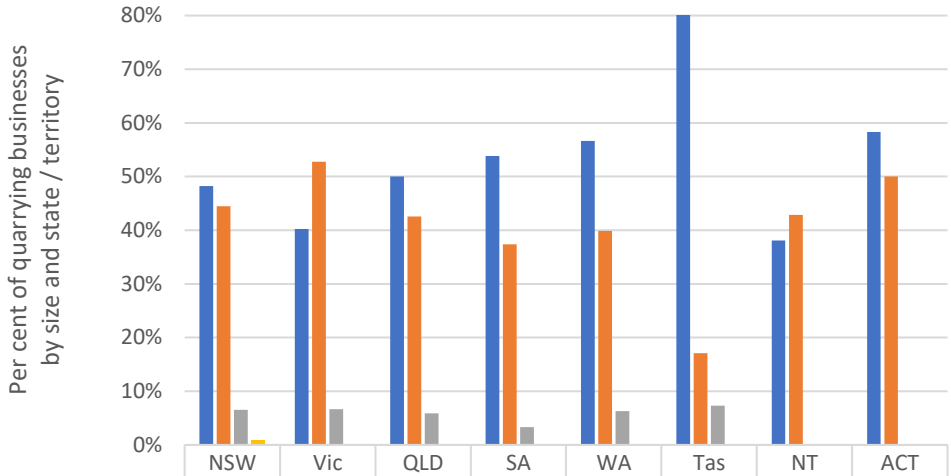
Source: DEM data for tenement returns for period June 2019 to December 2019[11]

[10] Mining Act (n 4) s6(1).
[11] Data based on top 100 EML tenements and PMs by reported production for 2019 (as reported to DEM). Excludes tenements with nil production reported or nil location provided.

As indicated in Map 1.1, extractive minerals are quarried across the state although most sites are located in and around the greater metropolitan area of Adelaide. Other major quarry clusters are found on the northern coasts of the two gulfs, Fleurieu Peninsula and in the far South East. Based on the data provided to DEM, 32 per cent of the top 100 extractive mineral sites that reported production for 2019 were private mines that produced 54 per cent of the total production (for the top 100 extractive mineral sites).

According to the most recent mineral resources regulation report[12] published by DEM, there were 2,191 mineral tenements and 220 private mines held in South Australia as at 30 June 2019, 24 per cent of the mineral tenements were extractive mineral leases.

Figure 1.1: Proportion of mining businesses classified as quarrying and construction material mining (ABS classifications) by size (based on number of employees) for each state and territory operating at the end of 2018–19



	NSW	Vic	QLD	SA	WA	Tas	NT	ACT
Non employing	48	40	50	54	57	80	38	58
Small business (1-19 employees)	44	53	43	37	40	17	43	50
SME business (20-199 employees)	7	7	6	3	6	7	0	0
Large business (200+ employees)	1	0	0	0	0	0	0	0

Data sourced from: ABS, 8165.0 Counts of Australian Businesses, including Entries and Exits, June 2015 to June 2019 – Businesses by Main State by Industry Class by Employment Size Ranges, June 2019

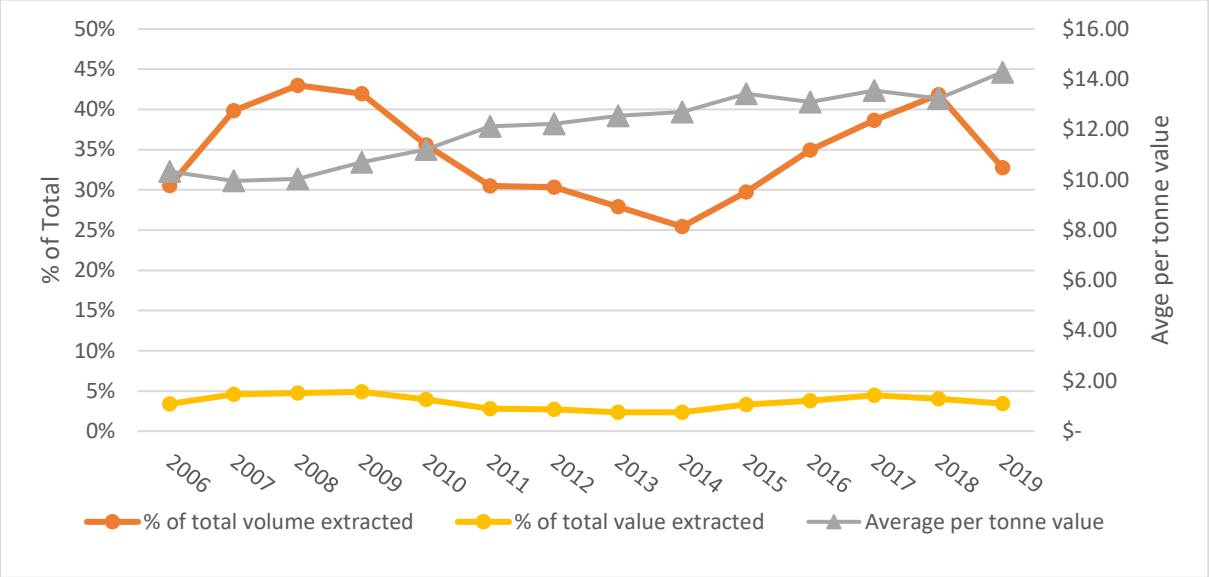
Figure 1.1 shows that the extractive mineral industry across Australia is largely made up of smaller operators, with relatively few companies employing over 200 employees as at June 2016.[13] Despite the high proportion of small and medium-sized enterprises, members of the industry advise the Commission that larger companies are responsible for the majority of production.

Figure 1.2 shows the value (at mine gate) and volume of extractive construction minerals as a percentage of total minerals mined in SA from 2006 to 2019 based on data published by DEM. It indicates that the volume share is much higher and fluctuates to a greater degree over time compared to the value share. Figure 1.2 also shows the average value of extractive construction minerals per tonne (based on DEM data), which in 2019 was of the

[12] DEM, *South Australia mineral resources regulation report for 1 January 2018 to 30 June 2019* (2020). (Mineral resources regulation report)
[13] Australian Industry and Skills Committee, *Extractive Industries Quarrying* (web page, 7 February 2020) <http://nationalindustryinsights.aisc.net.au/industries/mining-drilling-and-civil-infrastructure/extractive-industries-quarrying>

order of $14 per tonne. The average value increased by 38 per cent between 2006 and 2019 (unadjusted for CPI).

Figure 1.2: Value and volume of extractive mineral commodities mined in SA as a percentage of total value and volume of minerals mined in SA and average value per tonne over time



Source: Resource production statistics from 2006 to 2019 (web page, 5 June 2020) <https:\\energymining.sa.gov.au/minerals/resource_production_statistics>

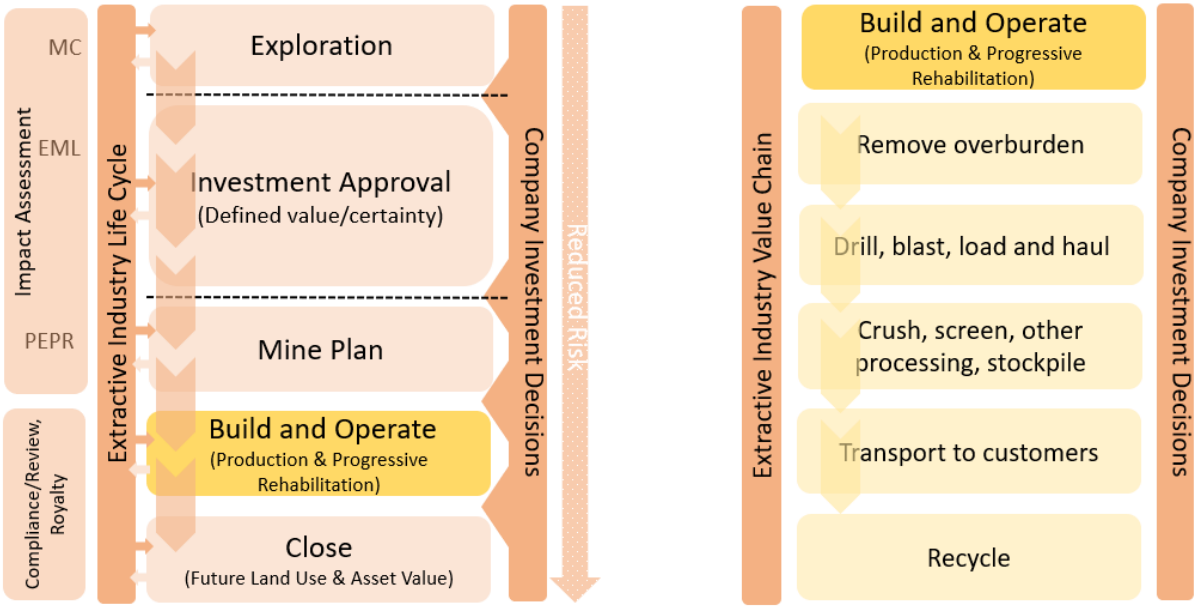
1.3 Life cycle and supply chain

The development and exploitation of an extractives reserve follows the defined stages of a life cycle. They are illustrated in the left-hand side of Figure 1.3. The reserve must be:

- Discovered (exploration).
- Evaluated, defined, valued and development planned to the point of receiving investment approval by the business. Compared with (non-extractives) mines, the Commission understands that most extractives quarries tend not to do exploratory drilling.
- Built and operated (entailing a bankable business plan, construction and operation within regulatory boundaries and performance against expectation). This stage typically includes progressive rehabilitation.
- Closed (having regard to the terminal value of the location of the resources and its rehabilitation).

Investments in this activity occur at each stage (see the right-hand side of the life cycle section of Figure 1.3). The level of risk to the business tends to fall as the mine moves through the stages, as confidence builds in the information available and the parameters of the mining project (scale, length of life, etc.)

Figure 1.3 Extractive activity life cycle and value chain



Source: SAPC

1.3.1 Government decisions

Extractives activity involves three areas of high-level decisions by the state's regulatory system, which are related to the stages in the left-hand side of Figure 1.3:

- deciding the *initial land use* – extractives or some alternative use – having regard to the various public interests, for example, geographically fixed resources to build infrastructure and settlement of an expanding population;
- the subsequent *operating conditions* for an approved extractives operation, having regard to the local impact on its neighbours and other state-level objectives; and
- deciding the *subsequent land use*, which affects the quality of the closure in the final stages of the operating phase, while ensuring the state's exposure to the legacy of poor decisions is limited to an acceptable level.

The tools applied by the government are noted in Figure 1.3. The government approves a mineral claim, which stakes a claim over the relevant parcel of land. Whilst it is open to proponents to lodge an exploration Program for Environment, Protection and Rehabilitation (PEPR), it is understood that this is extraordinarily rare in the extractives industry. Having discovered a deposit of extractive material, proponents must take out an EML over the deposit as the next step, which sets out broadly what they intend to do with the deposit. Before building and mining may start, proponents must obtain an approved operations plan, the PEPR (or Mine Operation Plan for a PM), which specifies the performance and compliance required from the co-regulators of operations, including rehabilitation requirements. During the operational phase the quarry also pays a fixed royalty to the state government per tonne of output, which is compensation for removal of the state's extractive minerals.

1.3.2 Quarrying and other neighbourhood interests in extractives operations

The right-hand side of Figure 1.3 illustrates more detailed aspects of the operational phase, including the operational supply chain, which are governed by several regulators to address the various public interests associated with the neighbourhood effects. To elaborate, these effects centre on:

- noise and dust associated with mining (blasting, hauling, crushing, etc.);
- water (including the water table);
- congestion and accident risk associated with truck movements;
- loss of visual amenity;
- safety in the workplace (risks of accident and injury, the consequences of which may not be taken sufficiently into account by managers); and
- impacts on heritage assets and also native vegetation.

These neighbourhood effects can have a significant impact on the well-being of the local community. However, they may not always be taken into account by mine operators. They are not part of the operating costs under consideration. In such circumstances their extent can be excessive, a symptom of which will be complaints from the community. In this circumstance, there is a case for government to intervene, in order to bring these costs to bear in decision making. In this sector, in South Australia, these interventions take the form of regulations, though other tools are available.

The end of life of a deposit raises other questions. The community has an interest in securing a valuable use of the land abandoned. Doing so can be more or less easy depending on the extent of rehabilitation that has occurred during and at the end of the production process. An operator who fails to rehabilitate imposes costs on the community subsequently, as they seek to reclaim the site for another use. These situations also lead to an argument for, and an application of, various policy tools or forms of intervention, to bring the side effects into account. Again, the question is whether the right tools are chosen for the resolution of each particular problem.

1.3.3 State interests in the location of extractives activities

The right-hand side of Figure 1.3 refers to customers, who are mostly involved in construction projects or supply more highly processed inputs, such as concrete, to construction work. Concrete is a mixture of aggregates, such as sand and gravel or crushed stone, water and Portland cement, which itself is made from extractive materials. All these activities involve connections to other supply chains, from outside this industry, which deliver various inputs.

As Map 1.1 shows, there are many significant deposits in South Australia. While the unit value of the material at the mine gate is low, transport costs per unit of the material are relatively high. Longer transport distance can make a significant difference to the delivered cost of the material (sometimes equivalent to multiples of the price of the quarry output) and so to construction costs. Transport also involves impacts such as congestion and road damage.

The Commission heard that Adelaide is uniquely placed compared to other Australian capital cities as its highest-production quarries, which are also the longest established and generally

have the longest operational lives, are located within the greater metropolitan area. Their proximity to major metropolitan infrastructure projects is a competitive advantage to South Australia by minimising the transport component, which makes up the highest proportion of construction material costs.

However, the local community has an interest over time in taking up land in adjacent urban areas, as the population grows. If land which is sought to be converted to housing abuts extractives projects, and that development is allowed to proceed, the costs of the side effects noted above apply to more people. An outcome could be the closure of a mine, through local community pressures and applications of the regulatory process. This closure could be earlier than contemplated at the start of the mining process. Other extractives resources are available, but they are likely to be more distant, so the extractives activity shifts to locations from which transport costs are greater. At the same time, if the mine is not closed, then housing developments move to other and potentially less preferred locations.

The state therefore has further interests (in addition to royalties) that relate to optimising the geographic usage and reservation of deposits:

- avoiding unnecessary costs to infrastructure projects arising from unnecessary transport costs;
- avoiding additional damage to roads from hauling material an unnecessary distance; and
- avoiding higher costs or lower levels of amenity from denying access to housing land adjacent to existing suburban areas.

1.3.4 The regulatory process

The regulatory regime applied to this sector must, accordingly, adjudicate a variety of interests. Extractives companies, end users of the products and input suppliers have strong incentives to promote efficient outcomes. Various parties are affected by the neighbourhood consequences of the mining operations, and they have a strong interest in the outcomes. But in addition, there are interests at the state level. The mining operation involves the management of assets of the state, the mineral deposit, which is translated to value through royalty systems. Failure to exploit a deposit sterilises that asset. Other considerations are the terms of access to resources in ways which minimise transport costs: those which are borne by customers affect the costs of other projects, including infrastructure investment, with consequences for the state as a whole. Those which are side effects, such as congestion and road wear, affect other road users. As well, there is an impact to consider on the provision of land for new housing adjacent to existing urban settlements.

Later sections discuss in more detail how these regulatory elements are designed and implemented, at the various stages of the life cycle.

While DEM is the lead regulator for extractives, no single regulatory agency is accountable for the entirety of this picture. Managing the regulatory interdependence is a key challenge for the overall efficiency of the regulatory arrangements. The Commission heard of repeated instances where inefficient interfaces among regulators cause delays, excessive complexity, additional cost and an inefficient approach to risk to proponents.

Possible causes lie at several levels. One is the operational level where there is the risk of regulators crossing over and impeding each other, possibly because of different decision-making systems, staff skills, expectations and cultures. This results in regulatory interfaces

that are unnecessarily complex, costly, time consuming and high in ambiguity for both the regulators and proponents.

This situation also raises the question of how the overall value and balance of SA interests are assessed, since the detail of operations can obscure the aggregate of the state interests. It makes sense for specialists to deal with particular policy issues, environmental impacts for example, but if the values received and perceived to be associated with this sector are to be maximised all the interests involved have to be taken into account and reconciled. The answer is not an addition to the proliferation of agencies to resolve this issue but to:

- clarify the interests of proponents, opponents and the people of South Australia and the principles for reconciling them;
- establish a mechanism for the interaction of the existing set of agencies and the interests on which they are focused, as a market would do;
- simplify and clarify the regulatory task of each agency; and
- viewed through the lens of the state's interests, align the regulatory processes to achieve the best result in the shortest time.

1.4 End piece

This draft report is structured as follows:

- Chapter 2 sets out the regulatory framework and processes.
- Chapter 3 provides the Commission's distillation of the key issues.
- Chapter 4 examines processes for mining proposals, extractive mineral leases and operating authority.
- Chapter 5 addresses quarry operations, closure and rehabilitation.
- The concluding chapter (Chapter 6) sets out the Commission's developing views about a better regulatory framework for extractives.

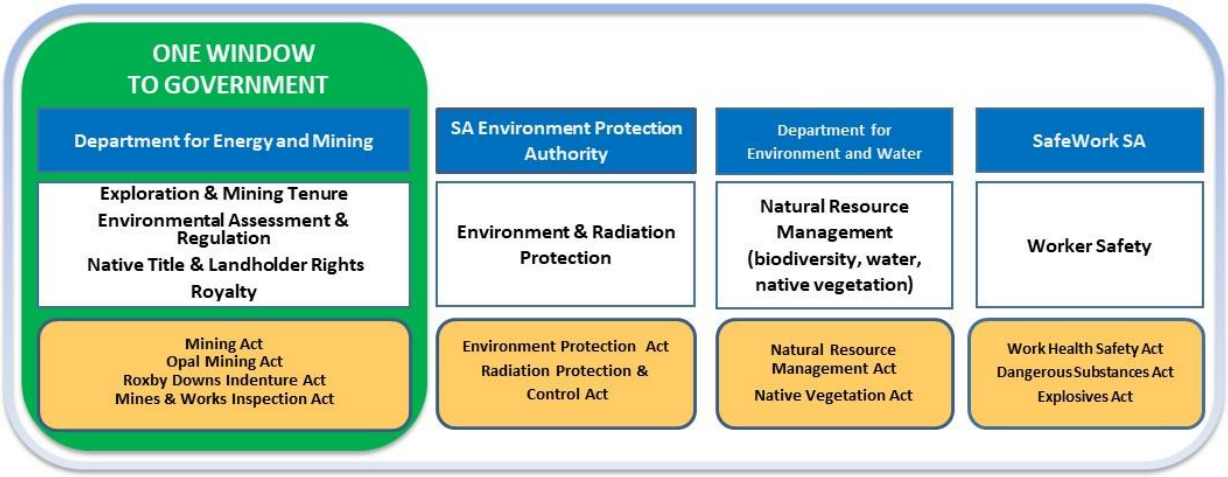
2. The regulatory framework

2.1 Introduction

The Department for Energy and Mining (DEM) is responsible for the administration and management of mineral resources and is the lead agency for the regulation of South Australia's (SA) mineral exploration and mining sectors.

2.1.1 One window to government

Figure 2.1: Quarries regulatory framework



Source: DEM

The Department for Energy and Mining (DEM) is the lead agency for mineral resources. Figure 2.1 also shows the other agencies that regulate aspects of quarry operations, often referred to as referral authorities or referral agencies when involved in mining applications and assessments. The regulatory frameworks understood by the Commission as being applicable to quarrying activity and the wider extractives industry supply chain are summarised in Appendix 2. DEM refers mining lease applications and operational approvals (see Section 2.1.2 below) to referral agencies to satisfy statutory requirements and to draw on the technical expertise possessed by those regulators.

2.1.2 Two-stage assessment process

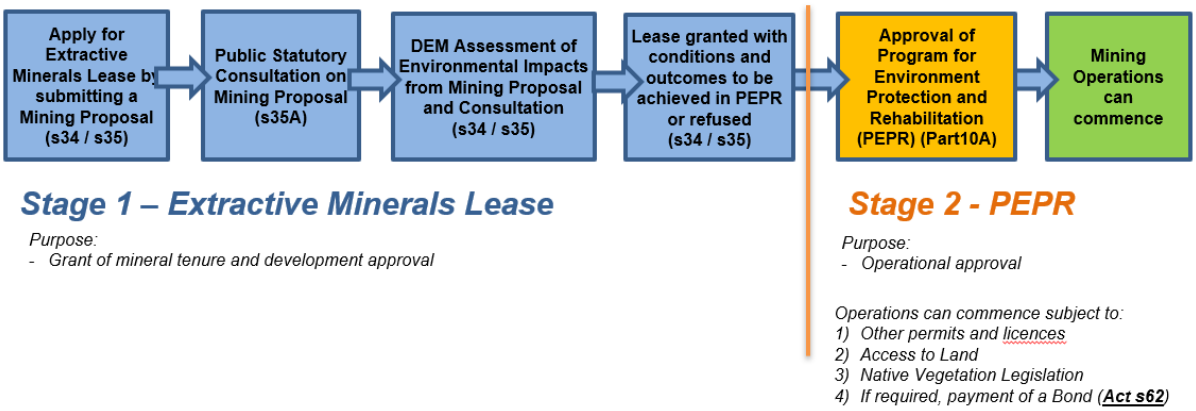
A core function of DEM, in collaboration with referral agencies, is to assess and approve new leases and environmental programs. In SA the three primary approvals required to prospect for, establish and commence quarry operations are:

- mineral claim: an administrative process[14] which allows the holder to prospect for minerals in the area of the claim for 12 months, and the right to apply for a lease over the area;

[14] Establishing and registering a claim requires negotiations regarding land access and other authorisations, agreements and consents. Registration of a mineral claim is purely an administrative process. If information required by the Mining Act has not been provided, the Mineral Tenements Team at DEM assist applicants so the mineral claim can be registered. See MG24 (n 5).

- extractive mineral lease (EML): gives the holder the exclusive right to mine for extractive minerals on the South Australian Mineral Commodity List; and
- Program for Environment, Protection and Rehabilitation (PEPR): the operational approval which is used by DEM to regulate quarry operations.

Figure 2.2: Two-stage mining assessment process



Source: DEM

Given the uncertainties involved, including the extent of the deposit and the costs of operations, it makes sense to move through a series of stages in both investment decisions and regulatory approvals. Investments occur in the mining operation each to a greater scale and with increasing confidence as the quality of the information about the deposit improves. Feedback from the regulatory process is also important at each step to bring to bear the likely impacts on other interests, and to identify issues which ultimately might stop the project.

The *Mining Act 1971* (the Mining Act) provides for a two-stage application and assessment process to enable mining operations to commence. The EML grants mining tenure and the PEPR the authority to commence mining. Prior to the stages shown in Figure 2.2 DEM offers applicants the option of a pre-lodgement review to assist in streamlining applications through the process. Mining proposals and PEPRs are provided to DEM in final draft form for review. The purpose of the voluntary review at this early stage is to create certainty for both the applicant and regulators regarding information requirements and level of detail before commencing the two-stage process.

The minister may publish a notice about information required for these approval processes. These are called ministerial determinations and they specify the information requirements for EML and PEPR applications. Ministerial determinations 2 and 3 are specific to extractive minerals.[15] Compliance with ministerial determinations is mandatory and enforceable under the *Mining Regulations 2011*[16] (the Mining Regulations).

[15] Department for Energy and Mining (DEM), *Ministerial Determination D002: Minimum information required to be provided in a program for environment protection and rehabilitation 2018* (Ministerial Determination 2); and *Ministerial Determination 003: Minimum information required to be provided in a mining proposal or management plan for an extractive minerals lease (EML) and any associated miscellaneous purposes licence (MPL) 2018* (Ministerial Determination 3).
[16] regs 30(3) and 65(7).

Private mines are regulated by part 11B of the Mining Act and regulation 80. They are exempt from the other parts of the Mining Act.[17] Therefore, the regulatory obligations that apply to other mining tenements do not apply to private mines. For example, private mines are regulated through a Mine Operation Plan (MOP) instead of a PEPR. The requirements for a MOP are defined in the Mining Regulations.[18] There is no corresponding ministerial determination but there is a regulatory guideline to assist in the preparation or review of a MOP.[19]

Stage 1: Extractive mineral lease application process

Applications are made to the Mineral Tenements Team who provide a receipt for the application. The Deputy Director of Mining Assessments allocates the application to an assessment officer who assesses the application against minimum requirements outlined in Ministerial Determination 3. If additional information is required to assess the application the applicant is advised at this point (Figure 2.2, Box 1).

The assessment officer undertakes a detailed technical assessment of the information provided and may request additional information during this stage. Once sufficient information has been provided the mining proposal will be open to public consultation for at least 14 days in accordance with s 35A of the Mining Act, and at the same time may be referred to other government agencies for comment.

If public submissions and/or comments from referral agencies are received DEM may request that the applicant responds to the matters raised. Typically, this is done once but clarifications may be required. The response document is assessed and may also be forwarded to referral agencies to confirm that the matters raised have been addressed (Figure 2.2, Box 2).

The assessment officer considers the mining proposal, public submissions, referral agency comments and any response from the applicant to that feedback before making a final recommendation. If the recommendation is to grant the lease, terms, conditions and environmental outcomes will be specified (Figure 2.2, Box 3).

The assessment report requires four endorsements – from a Compliance Officer, the Deputy Director of Mining Assessments, the General Manager of Tenements and Mining Compliance and the Mining Registrar (a detailed breakdown of applicable administrative processes is provided in Figure 3.1). All mining lease applications must be presented before the Tenement Review Committee (TRC) to confirm that all requirements under the Mining Act have been met and administrative law principles have been followed. The application is collectively endorsed by the TRC Chair and assessment report signatories. If an issue is identified (e.g. a statutory referral was overlooked) the TRC may refuse to endorse the recommendation and require corrective action before reconsidering it. If endorsed by TRC, the application requires endorsement by the minister's delegate. The DEM self-imposed target timeframe for an EML assessment to get to this stage is six months. For applications that use the streamlined defined impact template (see 2.1.3) the target timeframe is three months[20] (Figure 2.2, Box 4).

[17] Mining Act (n 4) pt 11B and s 73D(1).
[18] r 80.
[19] DEM, *Guidelines for miners: preparation of a mine operations plan (MOP)*, *Minerals Regulatory Guidelines MG12* (May 2012). (MG12)
[20] Mineral resources regulation report (n 12) 42.

Prior to the lease being granted regulation 40 of the Mining Regulations requires the minister to notify the applicant of the proposed terms and conditions and give the applicant the opportunity to respond before they are finalised. The assessment team considers any response and determines if any changes to terms and conditions are required, which must be endorsed by TRC and the minister's delegate. Once the notification process has been completed the lease can be formally granted.

Stage 2: PEPR/MOP assessment process

Once an EML has been granted a PEPR must be submitted within 12 months. The purpose of the PEPR is to provide information to demonstrate that the environmental outcomes outlined in the approved EML can be achieved. Draft outcome measurement criteria proposed during the lease assessment stage are finalised in the PEPR in line with the requirements of Ministerial Determination 2. The assessment officer is responsible for preparing an assessment report to recommend approval. Approval requires endorsement from a Compliance Officer, the Deputy Director of Mining Assessments, the General Manager of Tenements and Mining Compliance and the minister's delegate. The DEM self-imposed target timeframe for a PEPR assessment is three months (see also Figure 3.1).

Mine Operation Plan (MOP) assessment process

Where quarry operations are proposed on a private mine that has never been operated, a MOP must be prepared in accordance with the requirements prescribed by the Mining Regulations and assessed by DEM.[21] The draft objectives and criteria in the MOP must be subject to public consultation for at least 20 business days,[22] which is a similar process to the statutory consultation required for EML applications. Unlike an EML, only objectives and criteria are published, with no contextual information about proposed quarry size, location of operations on the private mine, hours of operation or strategies to achieve the objectives.

If submissions are received the private mine holder may be required to respond to DEM only if the comment is directly related to an objective or criterion. The minister's delegate can only approve objectives and criteria for new operations after this consultation process has occurred.[23] The MOP assessment process thereafter mirrors that of the PEPR assessment process.

PEPR or MOP review

PEPRs can be reviewed at the initiation of the tenement holder or directed by the Minister for Energy and Mining (for any reasonable cause) in accordance with section 70C of the Mining Act. For PEPR reviews where the current approved PEPR does not contain a set of environmental outcomes, Ministerial Determination 2 sets out mandatory information that must be provided in the revised PEPR. This additional information is required to assess environmental impacts and to develop a statement of environmental outcomes. PEPR reviews requiring an impact assessment on average take longer to approve given the level of information required from the applicant.[24]

MOPs are the operational approval for private mines and must be prepared in accordance with regulation 80 of the Mining Regulations. Most MOPs require an impact assessment to

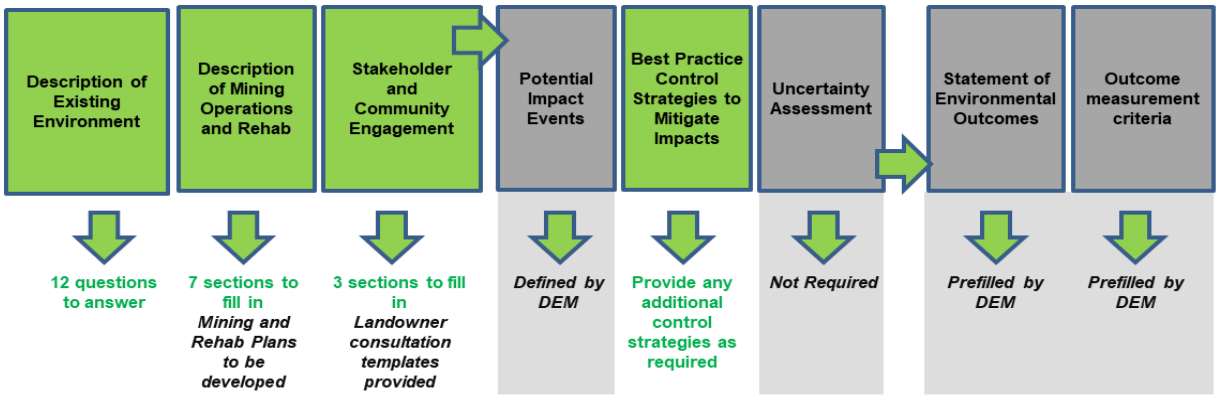
[21] reg 80.
[22] *Mining Regulations 2011* reg 81. (Mining Regulations)
[23] Mining Act (n 4) pt 11B and s 73G(11).
[24] Mineral resources regulation report (n 12) 44.

determine appropriate objectives and criteria and are counted as PEPRs (i.e. as operational plans) for reporting purposes.[25]

2.1.3 Simplifying lower-risk mining proposals

In November 2015 DEM introduced a simplified process for mining proposals, EMLs and PEPRs that can be used where the proposed quarry meets predetermined 'defined impact' eligibility criteria, which are specified in an eEvaluation tool made available for this purpose.[26] The green areas of Figure 2.3 indicate which parts of the assessment process are applicable in the defined impact process (compared with the standard process).

Figure 2.3: Defined impact template requirements comparison



Source: DEM

The eligibility criteria are designed to define potential environmental or third-party property impacts associated with the proposed mining operation. Proposed quarry activities that meet the eligibility criteria have been determined to have defined impacts prescribed by DEM that are considered to be lower risk and well understood.[27]

The benefit of this approach is that, where eligible, the proposal that follows is subject to predetermined environmental outcomes, which negates the need for an environmental impact assessment, which is the most resource-intensive part of any mining proposal assessment process. Applicants commit to the predetermined set of environmental outcomes and measurement criteria.

2.2 Regulatory performance

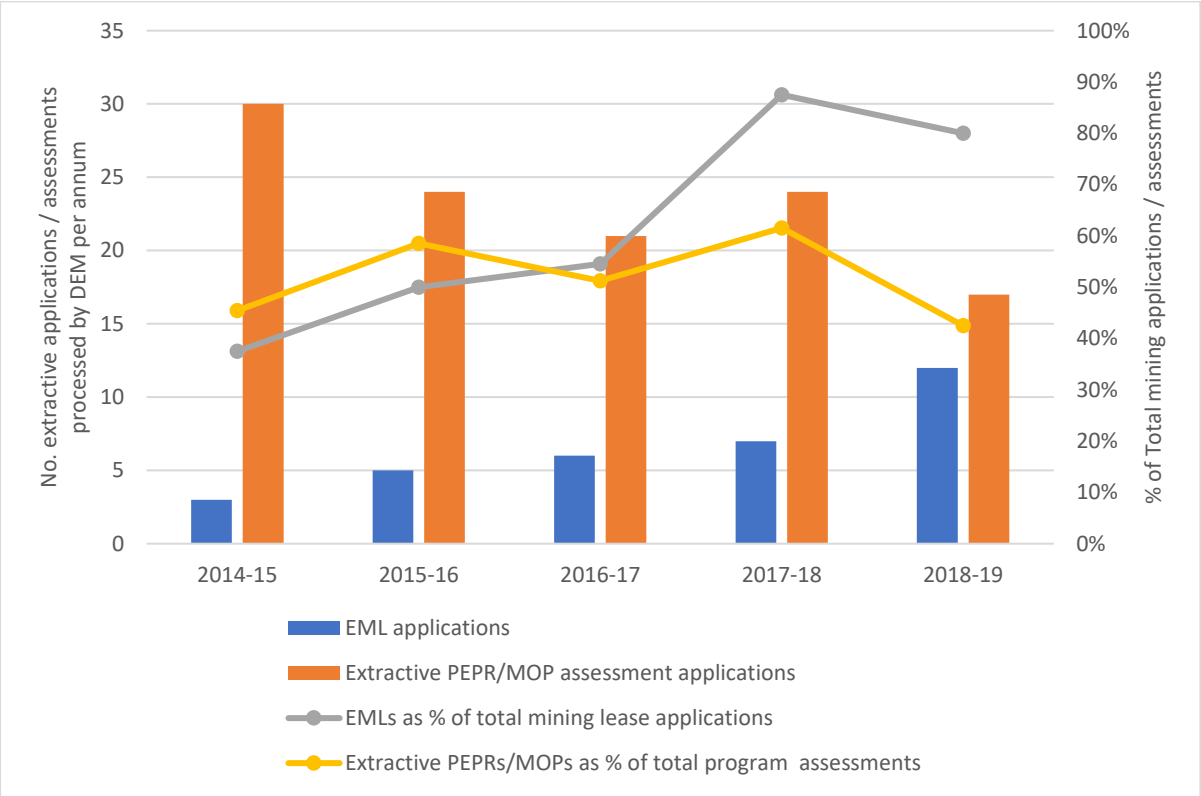
DEM records data on the extractive mineral regulatory activities that are carried out under the regulatory regime administered by DEM. Data captured includes application processes for EMLs, PEPRs/MOPs and compliance activities. The data illustrates the performance of

[25] Ibid.
[26] DEM, *Extractive Minerals eEvaluation Tool* (web page, 19 May 2020) <http://www.energymining.sa.gov.au/minerals/mining/extractive_minerals>
[27] Department of State Development, *Preparation of a mining proposal and/or program for environment protection and rehabilitation for quarries in South Australia with defined impacts, Minerals Regulatory Guidelines MG23* (2015). (MG23)

the regulatory regime. Information based on some of the data is published in an annual report.[28] Additional data was provided to the Commission for consideration.

2.2.1 Extractives-related applications processed by the Department for Energy and Mining

Figure 2.4: Number of extractives-related applications processed by DEM per annum by type of application, 2014–15 to 2018–19[29]



Source: DEM generated reports 2020: SR117 - MLA Assessments, SR118: MOP/PEPR Assessments

Figure 2.4 is based on information provided by DEM and assigns applications to financial years based on the date that they were lodged or submitted with DEM. All applications have been included irrespective of whether they were approved, withdrawn, pending or refused. Based on the data provided:

- There are significantly more PEPR/MOP assessment applications than EML applications as the statistic includes applications for new operations, reviews of existing operations, and a backlog of old approvals that are being brought up to current standards.
- EML applications as a proportion of all mining lease applications (grey line) has increased from 38 per cent in 2014–15 to 80 per cent in 2018–19.
- The average annual proportion of extractive PEPRs/MOPs as a proportion of total mining program assessments (yellow line) over the five years to 2018–19 is 51 per cent.

[28] Mineral resources regulation report (n 12) 11.
[29] Financial year based on date of receipt or submission of application.

The Commission has included all applications that were processed – irrespective of whether the application was approved, withdrawn, pending or refused.

DEM also captures, measures and publishes performance indicators including:

- the number of days taken to process EML and PEPR/MOP applications by days taken by DEM and days taken by the proponent;
- timeline targets for the number of days taken by DEM (183 days or 6 months to process an EML and 92 days or 3 months to process a PEPR/MOP); and
- volume and type of complaints and incidents.

The timeline data include the number of days taken from when an application is assigned to a DEM regulatory assessment officer for assessment through to when the minister's delegate has approved the application. Timeline data do not capture or measure the number of days taken for:

- processes undertaken before the application is assigned to a DEM assessment officer including the submission and lodgement process plus any pre-lodgement activities or reviews; and
- any activities or processes undertaken after the minister's delegate has approved an EML application including the regulatory notification process and formal grant of an EML.

The issues arising in the mining approvals processes are summarised in Chapter 3, including Figure 3.1 which shows a detailed breakdown of the administrative processes and respective timelines.

DEM advises that the timeline targets for days elapsed with DEM are aligned with 'the national mining approvals scorecard for the reporting of assessment timeframes across all Australian jurisdictions being developed by the COAG Energy Council Land Access for Resources Working Group'.[30]

Figures 2.5 and 2.6 below show the average days elapsed for applications processed per annum based on when the application was in DEM's possession or in the proponent's (applicant's) possession. The data include all extractives-related applications processed by DEM irrespective of whether they were approved. Further information on performance against timeline targets for days elapsed with DEM is provided in Section 4.6.

Figures 2.5 and 2.6 below provide information on the average number of days taken during the EML and the PEPR/MOP assessment application process and is based on:

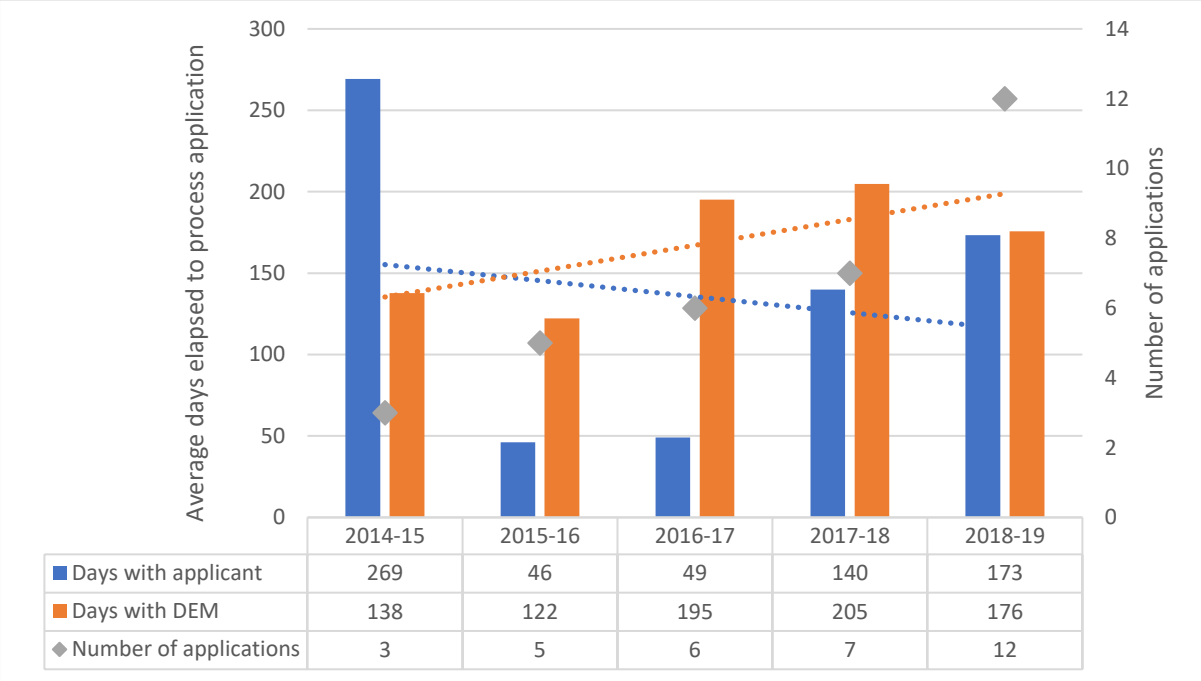
- information that is calculated based on data provided by DEM, including all applications irrespective of their status (approved or not);
- applications assigned to the financial year in which they were lodged or submitted to DEM; and
- average days elapsed calculations based on the time taken to complete the process for an EML or PEPR/MOP application.

For example, for the three EMLs that were lodged in 2014–15, they took on average 269 days with the applicant and an average 138 days with DEM for the process to be completed.

[30] Mineral resources regulation report (n 12) 41.

For 2018-19 the calculations may incorporate some approvals processes that were not completed within the year, which would tend to understate the average processing times.

Figure 2.5: Extractive mineral lease application processing times per annum – average days elapsed with applicant and with DEM, 2014–15 to 2018–19[31]



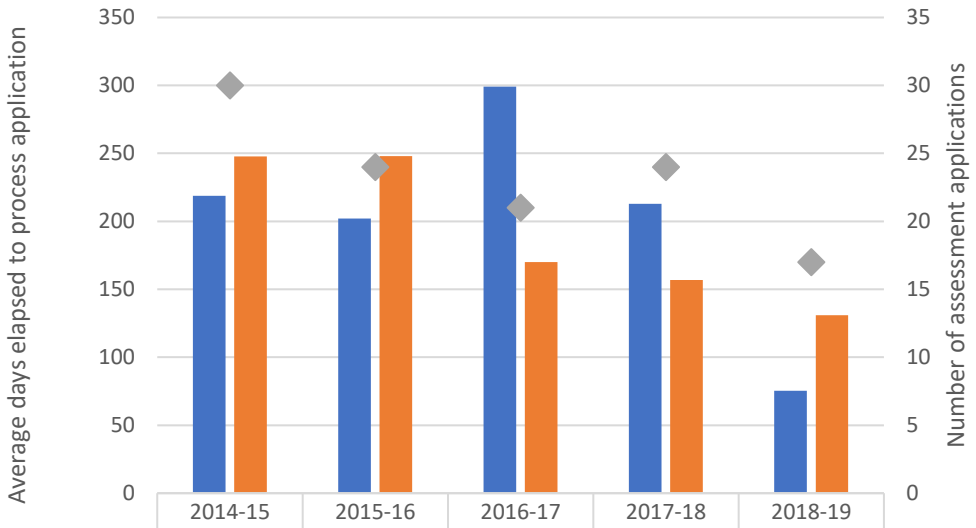
Source: Based on DEM data – SR117-PT – All MLA Assessments

According to the data provided by DEM, Figure 2.5 indicates:

- From 2014–15 to 2018–19, the number of extractive mineral lease applications increased by 300 per cent (from 3 to 12).
- For the five years to 2018–2019, the linear trend lines indicate that the average days taken by DEM has been increasing whilst the average days taken by the applicant has been decreasing.
- In 2014–15 the high number of average days with the applicant reflects both the low number of applications two of the three applications were withdrawn.
- On average, the total number of days taken to process applications that were supported (201 days on average) took half the time of those that were withdrawn, refused or pending, with applications that were refused taking the longest (439 days on average).

[31] Financial year based on date of receipt or submission of application.

Figure 2.6: Extractive mineral lease program assessment applications (PEPRs and MOPs) processing times per annum – average days elapsed with tenement holder and with DEM, 2014–15 to 2018–19[32]



	2014-15	2015-16	2016-17	2017-18	2018-19
Days with tenement holder	219	202	299	213	75
Days with DEM	248	248	170	157	131
No. application assessments	30	24	21	24	17

Source: DEM data – SR118: MOP/PEPR Assessments

According to the data provided by DEM, Figure 2.6 indicates that over the five years to 2018–2019:

- The number of extractives-related program assessments processed (PEPRs and MOPs) has reduced by 57 per cent.
- From 2014–15 to 2018–19, the average days taken by the tenement holder has fallen by 143 days, and the average days taken by DEM has fallen by 117 days.

Information request 2.1: Data analysis validation

To what extent is the Commission's analysis and conclusions regarding processing times a reasonable depiction of trends in processing times over the period 2014-15 to 2018-19? What other considerations are appropriate?

2.2.2 Regulatory compliance activities

Both industry and regulators have compliance responsibilities to ensure that outcomes are consistent with policy objectives. Operators must comply with statutory obligations which also form part of their social licence to operate, and regulators monitor and enforce their mandate through compliance frameworks and tools.

Consistent with the regulatory approval process, DEM advises that its compliance approach aims to use a 'performance-based regulatory approach which focuses on what should be

[32] Financial year based on date of receipt or submission of application.

achieved (outcomes), not how it should be achieved'.[33] Under the extractives regulatory framework in SA, it is the tenement holder's responsibility to monitor and demonstrate their compliance with the conditions of their EML and PEPR/MOP.

DEM's regulatory compliance model focuses on graduated measures, with unresolved or critical issues escalating to 'compulsive' 'punitive' measures (e.g. lease cancellation, prosecution or administrative penalty).[34] DEM compliance officers undertake site visits, inspections and audits to ensure tenement holders are adhering to statutory requirements and that approval conditions are being met and monitored.

Statistical information on the volume and type of DEM compliance activities (inspections and audits) is published annually. In the period 1 January 2018 to 30 June 2019 there were 1,004 exploration and mining inspections completed of which '50% were associated with extractive minerals operations (i.e. extractive minerals leases and private mines), which range from metropolitan hard rock quarries to low-risk, small sand mining operations'.[35]

While DEM is the lead agency for mining approvals and establishing some performance standards, mining operations and associated activities can also be subject to other regulations and standards. In this co-regulation environment extractives operators must also comply with the regulatory frameworks of co-regulators who have independent mandates that cover quarry operation activities and externalities. Unless DEM has delegated authority to manage compliance with co-regulator mandates (for example, native vegetation under the *Natural Resources Management Act 2004*), co-regulators also have a range of regulatory tools available to support compliance. For example, the EPA has 'regulatory tools, and the ability to exercise discretion to determine which tool is appropriate for particular circumstances'.[36] Co-regulation is considered in Chapter 5.

[33] Department of State Development, Mineral Resources Division, *Mining Act compliance and enforcement in South Australia*, *Report Book 2016/00028* (Report, 2016) 9.
[34] Ibid 6–8.
[35] Mineral resources regulation report (n 12) 12.
[36] Environmental Protection Authority (SA), *Compliance and enforcement regulatory options and tools* (2009) 8.

3. The issues: developing and sustaining the extractives industry supply chain

3.1 Introduction

This chapter distils the key issues that are subsequently considered in detail in chapters 4 and 5:

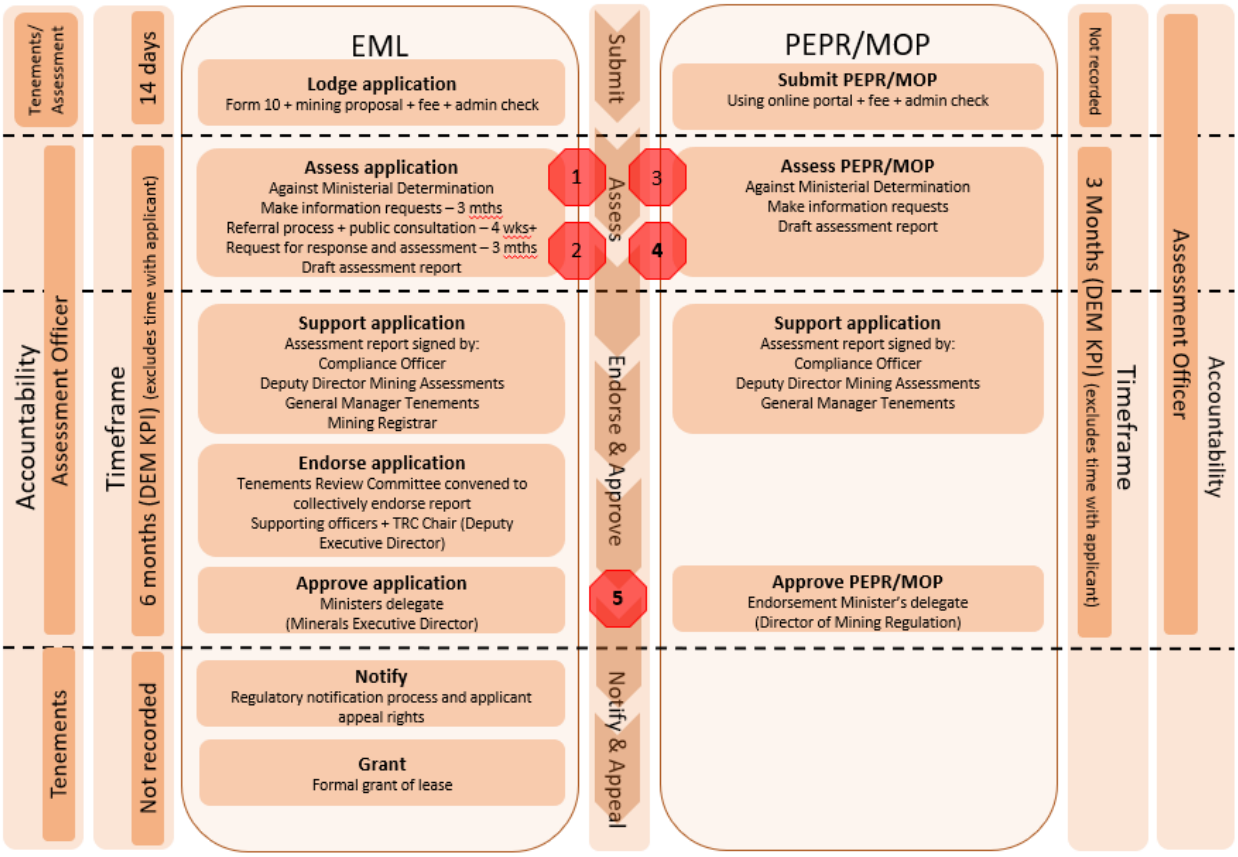
- Issues arising in the mining assessment process: the specific parts of the assessment process to obtain an Extractive mineral lease (EML) and a Program for Environment Protection and Rehabilitation (PEPR) or a Mine Operation Plan (MOP) that the Commission has heard cause the most concern for industry and quarry operators.
- Quarry operations and the extractives industry supply chain: those specific quarry operational activities or key supply chain activities that are covered by a regulatory mandate other than the Department for Energy and Mining (DEM) that have been raised by industry or proponents as being inefficient or creating costs or delays.
- Strategic development and sustainment of quarries: the issues impacting on establishing and sustaining quarries in the right place, and at the right time to minimise avoidable infrastructure costs while not compromising other government objectives.

Understanding the issues of quarry proximity to other sensitive land uses and the commercial relevance of transporting a low value–high volume commodity is necessary to consider regulatory design and performance. This enables a critical assessment of the practical effects of the existing regulatory framework, including the role and effect of DEM as the lead regulator and co-regulators' impacts on quarry operations.

3.2 Issues arising in the mining assessment process

The specific parts of the assessment process to obtain an EML, PEPR or MOP that the Commission has heard the most concern about are set out below and shown overlayed on the end-to-end assessment process in Figure 3.1.

Figure 3.1: EML and PEPR assessment process pressure points



Source: Office of the South Australian Productivity Commission

1 <u>Requests for additional information</u>:

Regulators often require proponents to provide additional information either before public consultation or after, with some requests being a result of the referral process. Industry feedback indicates that information requests can be unexpected, costly and result in significant delays for approval. Opportunities exist to reduce the likelihood of multiple information requests by clarifying upfront the key issues to be addressed without subsequent amendment unless there is a fundamental change in circumstances. This could be achieved by increasing regulator capability, improving guidance material for industry and broadening pre-lodgement to include referral agencies (see Section 4.2).

2 <u>Risk and proportionality in quarry assessment processes</u>:

The Commission has heard that the level of detail required by regulators to assess EML applications and PEPRs is not proportionate either to the risks posed by small-to-medium extractives operations or to the decision the regulators are required to make. The level of detail, depth of assessment and timeframes associated with getting approval are impacting on operators' ability to strategically site quarries in close proximity to regional road infrastructure projects where resources are available, reducing project costs. Codes of practice used interstate may offer a solution but may be limited in application by the requirements of the *Mining Act 1971* and, based on interstate examples, their parameters are very confined. There may be opportunities

to further streamline the assessment process for low-risk proposals by broadening the eligibility criteria for the defined impact process (see Section 4.3).

3 Inconsistency in approach by regulators:

While the ministerial determinations outline the minimum information requirements, the level of detail required by regulators in practice to assess an EML application, PEPR or MOP can be inconsistent. Industry has asked for more consistency and a greater level of certainty to support predictable assessment timeframes and costs to obtain an approval. Consistency in approach can be improved by further developing extractives industry–specific regulator capability, and building on existing formal cooperation arrangements (e.g. memoranda of understanding) between regulators, or putting them in place where they don't exist (Section 4.4).

4 Public consultation:

Public consultation and stakeholder engagement are impacted by the capability of the officer or organisation undertaking the consultation, community expectations, perceived risk, and the location of the quarry site (including if it is located on a private mine). Responses to issues raised require balancing social licence to operate considerations with the broader strategic significance of the quarry resource (Section 4.5).

5 Assessment application timeframes:

The time taken to process applications and approvals directly affects a quarry operator's ability to access, produce and deliver quarry material for construction projects. For state infrastructure projects, approval delays for strategically located quarries can impact on the government's ability to deliver value-for-money infrastructure. Timeframes for approval could be reduced by addressing the preceding issues and streamlining the endorsement process (Section 4.6).

3.3 Quarry operations and the supply chain

Quarry operations and supply chain activity can cut across the mandates of several regulators other than DEM. Co-regulators validly hold mandates to regulate activities or externalities arising from quarry operations (e.g. air quality), and supply chain activities (e.g. explosives transport and deployment). Industry and operators have concerns about how uniformly and consistently these mandates are applied.

3.3.1 Two systems: approvals, operations and co-regulation

There may be an association between quarries operating under dated environmental programs (regulated by DEM) and the level of intervention of co-regulators in mining operations.

The Commission has considered examples where the environmental objectives and criteria applicable to a quarry approved under the Mining Regulations are obsolete or obsolescent and do not reflect contemporary environmental standards administered by, for example, the Environment Protection Authority. This limits the extent to which DEM can effectively regulate those sites, including ensuring the operator meets contemporary environmental standards in line with community expectations. This results in other regulators, with separate powers but with mandates that validly cover quarry activities, being obliged to act on non-compliances and regulate that site. These issues are discussed in detail in Section 5.2.1.

3.3.2 Road network regulation impedes delivery

Road network access can significantly influence the efficiency of delivering construction materials to the end user. Getting material to infrastructure projects can be subject to several road network access constraints. It is just as important to industry to protect transport routes of extractives as it is to protect quarries. The role that road network access plays in supply chain productivity has been acknowledged in state planning policies.[37] There are also examples of government–industry partnerships that have led to innovative road network access solutions and improved productivity.[38] Where government is the end user of construction materials there are potential budget savings to be made through unlocking road network access, and prioritising road network upgrades that would increase the transport productivity of the extractives (and other) industries. The contracting arrangements between the head construction contractor and government is also an important part of achieving the benefits of lower-cost extractives construction inputs. These issues are discussed in detail in Section 5.2.2.

3.3.3 Reform of explosives legislation and regulation

The extractives industry uses explosives products and associated expertise. Industry and service providers consider the *Explosives Act 1936* and its regulations outdated and not fit for purpose. They have observed that SA has adopted a unilateral approach to explosives regulation in what is otherwise effectively a national supply chain. They assert the effect is inefficient regulation that imposes additional costs on businesses and causes commercial opportunities to be lost. It was put to the Commission that the reasoning behind South Australia (SA) refraining from adopting accepted industry standards is not clear to the industry. One option is to expedite the reform of the *Explosives Act 1936* which has been lagging since a significant review in 2016. These issues are discussed in detail in Section 5.2.3.

3.3.4 Quarry closure

Rehabilitation and closure of quarries are regulated through the Mining Act. The Mining Regulations specifically require that all mining proposals include a set of mine rehabilitation outcomes. This approach results in reduced disturbance area, determination of liability and costs for final rehabilitation in an economically efficient way. Industry has suggested that specifying quarry rehabilitation and closure arrangements before mining commences is a challenge. Operators require some vision of a final landform which will ultimately determine what land uses are available before crystallising these arrangements. Regulatory oversight of quarry closure should not extend to detailed plans until quarrying has commenced, resource boundaries are understood and a clear timeframe for closure is established. These issues are discussed in detail in Section 5.3.

3.3.5 Liability indemnification

The Mining Act prescribes the establishment of the Extractive Areas Rehabilitation Fund (EARF) to indemnify the government against any liability incurred to land disturbed by mining

[37] See for example State Planning Commission, *Integrated Movement Systems* (Policy Discussion Paper, 2018) (State Planning Commission, *Integrated Movement Systems*); State Planning Commission, 'Aligning South Australia's growth with transport infrastructure', *Guide to the Draft Planning and Design Code* (Report, 2019) (State Planning Commission, 'Aligning South Australia's growth').
[38] Primary Industries and Resources South Australia, *Improving Road Transport for Primary Production* (web page, 12 May 2020) <https://pir.sa.gov.au/major_programs/improving_road_transport_for_primary_production> (Primary Industries and Resources South Australia)

operations for extractive minerals. The holder of a mining tenement is responsible for rehabilitating land disturbed by mining operations. The EARF is there to ensure that the financial liabilities from non-rehabilitated mining activities do not become the responsibility of the people of SA. The current use and prioritisation of EARF funds appears to be inconsistent with industry's understanding. The value of quarry land for future purposes depends on its rehabilitation, and effective operation of government intervention to indemnify the community if required. These issues are discussed in detail in Section 5.4.

3.4 Strategic development and continuity of quarries

In SA there are two prevailing situations impacting on the strategic development and ongoing life of quarries, both of which impact on the state's interest in its ownership of mineral resources:

- There are competing interests arising from increasing proximity of residential development and other sensitive land uses to the large and most productive quarries in the state, the majority of which are Strategic Resource Areas[39] and are located in the greater Adelaide metropolitan area.
- The time it takes to obtain a mining approval for small-scale campaign quarries[40] in regional locations is misaligned with the notice periods and timeframes applicable to quarry pre-qualification and tendering processes, decreasing the prospect of establishing quarries to supply cost-effective construction materials to regional infrastructure (mostly road) projects.

In observing these two scenarios, the Commission notes that urban quarries may also be subject to challenges in the mining assessment and approvals process and that some regional quarries experience proximity issues.

3.4.1 Proximity and competing interests

The Commission considers that the state has an important advantage arising from the location of the state's most productive quarries in the Greater Adelaide metropolitan area, and their closeness to the biggest demand for construction materials (refer to Sections 1.3, 5.2.1 and 5.2.3). That said, the commercial advantages of that proximity also give rise to frictions in the form of competing interests over land use as Adelaide's suburbs have expanded, creating the risk of premature sterilisation of some of the resource base that these quarries rely on. It is the Commission's view that adopting in regulation a perspective that sees quarries as a state resource and translating the state's position to local planning and development decision making will support reconciliation of those competing interests.

There are inevitably incompatibilities between activities reasonably required in conducting quarry operations and the amenity expected by the community in adjacent residential settings. Quarries can also be seen as opportunities to place services and infrastructure, such as pipelines and power lines. When considering options to reconcile these incompatibilities it becomes apparent that the current situation, in some circumstances at least, is analogous to unmixing a cake. This has been acknowledged in previous

[39] The identification of Strategic Resource Areas and their importance is discussed in Sections 5.5.1 and 5.5.2.
[40] For the purposes of the review a campaign quarry refers to a short-term quarry that is established as close as possible to a specific project to minimise transport costs and therefore total materials and project costs. It can also refer to a long-established quarry that is operated sporadically to supply specific projects that require material available only from that quarry, or that are only commercially viable if supplied by that quarry.

examinations of the interfaces between mining and planning activities and the regulation of those activities.[41] Despite this acknowledgement and specific strategy and policy responses,[42] effectively protecting and preserving access to construction materials remains a challenge. These challenges manifest as potentially avoidable regulatory requirements being placed on the quarry industry with commensurate costs. This flows to infrastructure prices and, where materials feed into state infrastructure projects, an adverse impact on the state budget.

There is a prospect that if other interests override those of the quarry and their customers then quarries may prematurely close, or land containing construction materials may be sterilised. This would result in loss of the strategic advantage and require construction materials to be sourced from further afield than would otherwise be necessary. The opportunities to reform regulation and reconcile competing interests have been lost at this point. The additional cost arising from the transport of construction materials can be significant.

3.4.2 Small-scale quarries and regional infrastructure

There is a market for the output of small-scale, low-risk, campaign-type quarry operations in regional SA. The demand comes from regional infrastructure projects, particularly regional road upgrades and extensions, with the most cost-effective construction materials potentially coming from small-scale, short-term quarries that can be located in closest proximity to infrastructure projects. They can be low-risk activities taking the form of a sand pit or limestone outcrop in a farmer's paddock. However, the Commission has heard that these opportunities can and have been missed because there is a misalignment between the time it takes to obtain the applicable mining approvals, the time it takes to pre-qualify the quarry necessary for a conforming tender, and the period for which the project's tendering process is open.

The introduction of defined impact templates (see Sections 2.1.3 and 4.3) for use by proponents who meet predetermined eligibility requirements has had a positive impact on approval timeframes. However, some proponents consider that for these small-scale, short-term operations this simplified process is still disproportionate and incapable of providing an approval to support tendering in time. Boral's submission to the Leading Practice Mining Acts Review stated that a kilometre of standard two-lane highway would contain approximately 400 truckloads of aggregates,[43] highlighting the financial significance that a regional road upgrade could have on regional small businesses. Where these opportunities are missed materials are still supplied to projects, but usually from long-established regional quarries further afield, adding avoidable costs.

Whilst improvements in obtaining mining approvals will be of value, for these small-scale operations to deliver the cost benefit to regional infrastructure projects, improved efficiencies in the quarry pre-qualification process are also required. There is potential duplication in the current processes. The Department of Planning, Transport and Infrastructure quarry pre-qualification is used to determine if quarry material is fit for purpose. Infrastructure project contracts can also routinely require aggregate specification assessment at regular intervals

[41] GHD, Department of State Development, *Resource Area Management and Planning* (Final Report, 2014). (RAMP Report)
[42] See for example Department of Planning, Transport and Infrastructure, 'Mining and resources policy 66', *30-Year Plan for Greater Adelaide – 2017 Update* (2017) 77; State Planning Commission, *State Planning Policies for South Australia* (2019) SPP 1.4, SPP 9 and SPP 10. (Planning policies)
[43] Boral, *Submission to Leading Practice Mining Acts Review discussion paper* (2016) 2.

during supply to a project. There is a prospect that the warranting of materials specification could be delegated to the project manager, having the effect of negating the requirement for quarry pre-qualification to submit a conforming tender. The risk could be left to the project tenderer and worked out with the aggregate supplier. A combination of competition and contracting with head constructors could see the savings passed through to the government as the customer. Alternatively, accepting a tender pending pre-qualification may give the most cost-effective suppliers an opportunity to compete.

Without improvements in the notification to market of upcoming regional infrastructure projects, the benefits of shortening the timeframes it takes to obtain mining approvals and pre-qualification will not be fully realised and may still preclude participation in the tender.

4. Mining proposals, extractive mineral leases and operating authority

4.1 Introduction

In this chapter the Commission explores the five most prominent issues that were raised in relation to the mining assessment and approvals process led by the Department for Energy and Mining (DEM).

The issues are put in regulatory context and considered from their design and performance perspectives. The issues are:

- requests for additional information;
- risk and proportionality in mining assessment;
- inconsistency in approach by regulators;
- public consultation; and
- assessment application timeframes.

The Commission invites interested parties to respond to the Commission's understanding of the issues and the draft recommendations. The following chapter considers issues arising in regulatory processes once operations have begun.

4.2 Requests for additional information

As part of the extractive mineral lease (EML) and Program for Environment, Protection and Rehabilitation (PEPR)/Mine Operation Plan (MOP) application processes regulators may seek further information from proponents in line with statutory requirements and to fulfil regulators' mandates.

The volume, proportionality and complexity of information requirements was a key theme raised with the Commission by industry stakeholders. The principal concern was not that information is required, but that the iterative nature of information requests, excessive detail and type of information requested caused avoidable delays and unanticipated costs that were considered disproportionate to the project risk. Operators are seeking earlier and more comprehensive advice about the scope and detail of information required to enable them to support their application.

The key issues raised were:

- Requests for information (RFIs) for an impact assessment are not proportionate to the risk profile of the project nor the risk profile of the operator.
- The type, nature and volume of information requests varies according to the risk tolerance, or capability, of the individual assessment officer and can differ between regulators.
- Regulators appear not to appreciate the costs incurred in responding to all information requirements, particularly where multiple requests require expert advice at significant cost to the proponent.

- Proponents considered regulators are increasingly requiring them to provide detailed reports and information that proponents considered are the regulator's responsibility.
- Regulators' expectations of information requirements are more aligned with the size of the organisation rather than risk, with more information and detail required from larger organisations.
- Information requirements do not account for a proponent's previous regulatory track record (good or bad).
- There is a lack of clarity and agreement between regulators and proponents on the type and detail of information required early in the application process, and the minimum information requirements laid out in the ministerial determinations do not assist.

Feedback from regulators indicates they share some of the concerns raised by industry, particularly those practices that inefficiently use resources or may potentially have an adverse impact on environmental outcomes. Issues raised by regulators included:

- The volume and type of information requests can depend on the quality of a proponent's application – applications with inadequate information require extensive follow up and clarification.
- Co-regulators can adopt a different approach to an issue reflecting their regulatory mandate; this can influence the nature of information requested.
- Co-regulators' information requests are not raised with DEM at the time the application is submitted.
- The referral process coordinated by DEM does not capture all regulatory processes and requirements in the extractives industry supply chain, which leads to occasions where proponents are left having to navigate regulatory licensing requirements (with additional information requirements).

4.2.1 Volume

Industry feedback indicated that the number of information requests can be excessive:

> *Excessive multiple requests for information … Boral notes that other legislation such as the Planning, Infrastructure and Development Act/Regulations limits planning authorities to only make one request for information*.[44]

> *In many cases we find ourselves producing 5 or 6 versions of a MOP or PEPR to accommodate what often seems like an endless stream of requests for 'further information' and revisions resulting in lengthy delays and increased costs for the applicant*.[45]

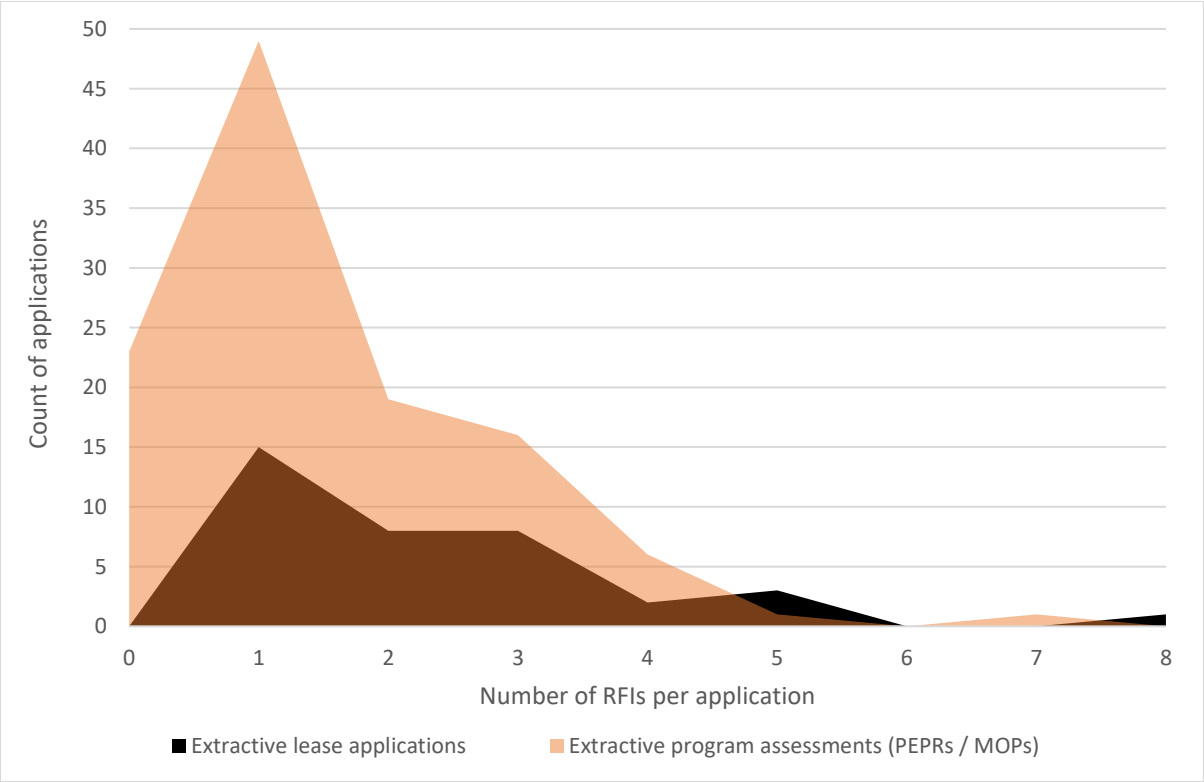
As the lead quarry regulator, DEM coordinates formal RFIs from co-regulators to proponents. DEM records the number of RFIs associated with each application for an EML, PEPR or MOP. Figure 4.1 shows that the majority of applications for extractives EMLs and PEPRs/MOPs had two RFIs or fewer:

[44] Boral, Submission DR3 to South Australian Productivity Commission, *Extractives Supply Chain Review* (9 April 2020) 2. (Boral submission)
[45] ePlanningSA Pty Ltd, Submission DR6 to South Australian Productivity Commission, *Extractives Supply Chain Review* (7 May 2020) 5. (ePlanning submission)

- Over 75 per cent of all applications (EMLs, PEPRs or MOPs) required two information requests or fewer.
- 38 per cent of EML applications and 21 per cent of extractive program assessments (PEPRs/MOPs) required three or more RFIs.
- The number of RFIs per application ranged from zero to eight, with 9 per cent of EML applications requiring five information requests.
- MOP program assessment applications required, in general, more RFIs than PEPRs, with 28 per cent of MOPs requiring three or more RFIs compared to 19 per cent for PEPRs.

The Commission considers the high proportion of applications that required more than two requests for information is an indication that the regulatory process is not operating efficiently.

Figure 4.1: Volume of extractive mineral applications by number of information requests, 1 July 2016 to March 2020



Source: DEM reports SR117-PT – All MLA Assessments (printed on 11/05/2020); and SR118: MOP/PEPR Assessments (printed on 27/04/2020). Note: All extractives-related applications that were processed by DEM from 1 July 2016 to March 2020 are included in Figure 4.1, irrespective of whether the application was supported, withdrawn or refused.

DEM data provided on the Commission's request shows that, on average, over the five years to 2018–19 the number of information requests per application (EML or PEPR/MOP) declined. The Commission also heard:

- The data on applications and information requests do not include additional information requirements arising from environmental regulatory licensing requirements that are not captured in DEM's referral process but are necessary for a

proponent to be able to operate and supply the market (e.g. prescribed activities of environmental significance under the *Environment Protection Act 1991*[46]).

- The number of RFIs does not reflect the size of the regulatory burden on a proponent as it does not account for the complexity or scope of each RFI – a single RFI may contain numerous complex questions from various regulators including DEM.
- The number of RFIs can reflect the quality and completeness of the application, with lower quality and/or incomplete submissions requiring follow-up with the proponent.

4.2.2 Proportionality and consistency

The Commission has heard that the type of information required is sometimes not proportionate to the risk of the proposed quarry project, including examples where:

- Relatively low-risk quarry proposals must provide the same information as a quarry proposal of much higher risk or complexity.
- Quarry proposal applications that have apparently very similar risk and complexity profiles must provide different amounts of information with differing levels of detail.

Industry advised the Commission that regulators often do not have an understanding of the impact that iterative requests for information can have on a proponent including:

- the costs incurred by diverting resources to answering information requests and/or the purchase of specialist expert services to produce expert reports; and
- the unexplained and unpredictable variability in information requirements, which causes uncertainty, making it difficult for proponents to adequately plan for, and allocate an efficient quantum of resources to, an application process.

> *Consultants are unable to provide fee estimates at the commencement of the project to account for RFIs (requests for information) due to inconsistencies in the review process*.[47]

> *Having prepared a Mineral Claim application, Mining Proposal, MOP or PEPR and submitting it for departmental review and approval it can sometimes be months before any response is received. Following a review there are often changes sought by the delegated Assessment Officer. It becomes even more protracted when there is a change of Assessment Officer halfway through the assessment process or after satisfying all of the required changes the document is sent for review by another member of staff who may have a different point of view and require more changes and additions.*[48]

4.2.3 Co-regulation and referrals

As the lead regulator, DEM coordinates RFIs from referral authorities into a single document to send to the applicant. This aims to reduce duplication and streamline the process. However, the Commission has heard from industry that:

- Different assessment officers and regulatory authorities can have different views on an issue that was unforeseen when DEM coordinated the original RFI, resulting in additional RFIs.

[46] Sch 1.
[47] Boral submission (n 44) 2.
[48] ePlanning submission (n 45) 5.

- Proponents are required to provide additional information in order to comply with licensing requirements for regulatory authorities who are not captured by DEM's referral process but are necessary in order for the proponent to supply quarry materials (e.g. transport or tender requirements).

From the proponent's perspective unanticipated requests for information from different sources, often later during the process, and requiring duplicate (or even contradictory) information causes uncertainty and confusion.

> *In some instances, getting a lease approved can be a long and expensive process … information required seems to change over time. This may be a combination of different people (DEM and other government agencies) reviewing the document and regulations/determinations coming into effect during the process … certain issues (for example water) taking on greater significance that they might need to.*[49]

4.2.4 Guidance

DEM publishes guidance material to assist proponents with application processes and to support operators to meet their regulatory obligations. Ministerial determinations[50] are published pursuant to the minister's powers under the *Mining Regulations 2011* (Mining Regulations), and various guidelines are available on regulatory processes.[51] Workshops, forums or other events are held from time to time where industry information and policy positions are shared.

The Commission has heard that, whilst minimum information requirements are set out in ministerial determinations (and detailed information is available for MOPs in a guideline[52]), industry considers that the guidance lacks sufficient detail on what is acceptable to regulators, and the requirements are open to interpretation by assessment officers depending on their experience, background and risk tolerance.

Regulators have told the Commission that a contributing factor to the number and type of RFIs sent to a proponent is the quality of the application and the absence of sufficient information from the outset. The quality of an application or response to an RFI can indicate several factors, including how well the proponent understands the information requirements, and the proponent's experience with the applicable regulatory process. Industry feedback indicates that proponents consider:

- It is not always clear what the information priorities are.
- The guidelines have become de facto policy instruments and their application goes beyond the intent and authority set by legislation.
- Assessment officers can apply guidance material in an overly prescriptive way.

Barossa Quarries cited an example of unclear information requirements with the introduction of an 'uncertainty' clause in Ministerial Determination 2.[53] The minimal amount of guidance

[49] Clay and Mineral Sales Pty Ltd, Submission DR5 to South Australian Productivity Commission, *Extractives Supply Chain Review* (5 May 2020) 2. (Clay and Mineral Sales submission)
[50] Ministerial Determination 2 and Ministerial Determination 3 (n 15).
[51] See the extractives minerals guidelines at DEM, *Regulatory guidelines* (web page, 4 June 2020) <http://www.energymining.sa.gov.au/minerals/mining/regulatory_guidelines>
[52] MG12 (n 19).
[53] Ministerial Determination 2 (n 15) [11.2.2].

on how to interpret 'significant degree of uncertainty' makes it difficult for proponents to respond effectively to this requirement at the time of making an application.[54]

> *Without having 'tested' this clause, or having considerable experience at making such descriptions, a consultant or an operator would have a very long and torturous time trying to fulfil this requirement. This alone could add thousands of dollars to the cost of an application.*[55]

In the Commission's view, regulatory guidance material needs to strike an efficient balance between providing information that is clear and informative while leaving sufficient flexibility for proponents and regulators to exercise judgement and apply a risk-based, outcomes-focused approach. New or significantly amended guidance should be developed in conjunction with regulated parties and its introduction accompanied by workshops or other means with an explanation by the regulator(s) on how it is to be applied.

DEM has recently released a new guideline on environmental outcomes for quarrying and mining applications,[56] and is working on a guideline regarding measurement criteria for quarrying and mining to be completed by the end of 2020. The aim is to reduce the amount of information requests required during the assessment process and improve timeframes for approvals.

4.2.5 Capability

Based on feedback provided, a key factor influencing the number, variability and type of information requirements is the level of capability[57] in the sector (both regulators and industry). Capability influences the extent to which risk is considered and embedded in application processes and reflects:

- how well regulators understand extractive mining as a 'sub-sector' of mining in South Australia (SA);
- a regulatory authority's approach to exercising their regulatory mandate in the quarry context;
- the level of training and skills development of regulatory officers and whether the authorising environment they operate in supports them to exercise professional discretion rather than applying a 'one-size-fits-all' approach;
- the level of complexity and prescription in guidance material and the extent to which that is relied upon, which may limit exercising of professional judgement, flexibility and innovation; and
- if, and how, the capability of the proponent is supported and/or recognised.

A lower risk tolerance by regulatory officers may result in more information requests, more detail and more rework. This contrasts with regulators who have a good understanding of the industry (including specific challenges facing the industry and parts of the industry) and can

[54] Barossa Quarries Pty Ltd, Submission DR2 to South Australian Productivity Commission, *Extractives Supply Chain Review* (20 April 2020) 1.
[55] Ibid.
[56] MG30 (n 1).
[57] For the purposes of this section, 'capability' refers to the skills, ability, data, capacity and knowledge that is required to fulfil roles and obligations.

assess the risk commensurate with the profile of a particular application, requiring only information that is necessary to determine the application.

> *Major costs are associated with DEM multiple requests for information (RFI). Boral typically engages consultants to prepare lease applications/Mine Operations Plans/Program for Environment Protection and Rehabilitation (PEPR).*[58]

4.2.6 Uncertainty

The Commission has heard that proponents are uncertain or unclear on the timing, type and extent of information that a proponent will be required to provide to regulator(s) at the commencement of the application process. Providing clarity and a shared understanding about information required early in the application process may limit the risk of iterative requests for information and support collaboration between regulators and proponents.

DEM advised the Commission that a pre-lodgement review involving referral agencies is standard practice for larger metallic mineral lease applications but is considered on a case-by-case basis for quarry impact assessments (usually for more detailed assessments). Pre-lodgement typically involves a DEM assessment officer reviewing a draft mining proposal or PEPR prior to lodgement.

Pre-lodgement review may, but rarely, involves referral regulatory authorities, although DEM has advised that consulting with referral agencies can add considerable value to the process. Pre-lodgement review aims to:

- identify and prioritise risks including any potential ‘show-stoppers’;
- ensure the proponent has undertaken a reasonable public or targeted consultation process, or there is a consultation plan and any consultation is commensurate with the scope and risk of the proposal;
- focus the resources of the regulator and proponent on identified and prioritised issues (including information requirements);
- help manage the requirements of referral authorities to improve overall efficiency in the process; and
- support a proportionate assessment process.

DEM considers the pre-lodgement process can streamline the process, reduce timeframes, lead to a consistent approach, and require fewer information requests. In principle, the Commission agrees. In practice, the current pre-lodgement approach has limitations including:

- The success of pre-lodgement depends on the capability of the assessment officer in identifying gaps in the information provided by the proponent and in understanding how such gaps affect the application or PEPR moving through the approval process.
- There does not appear to be a threshold or determination on when pre-lodgement could add value and efficiency.
- There are no performance indicators to measure the potential benefits of pre-lodgement (current timeframe assessments do not include pre-lodgement activities).

[58] Boral submission (n 44) 2.

- The apparent low number of quarry proposal pre-lodgement reviews may mean proponents:
    - are unaware of the pre-lodgement option (noting the guidance material focuses on pre-lodgement for metallic or industrial proposals)[59];
    - have insufficient time (e.g. the mineral claim might be about to expire); or
    - do not consider it would add value or be necessary.
- The process can potentially be resource intensive from regulators' perspectives (albeit it can save time later in the assessment process).

The Commission considers that a pre-lodgement process can have significant benefits when approached appropriately by the proponent and the regulator(s). A successful pre-lodgement process with all regulators identifies all critical issues (show-stoppers), enables regulators to understand and identify risks that they are concerned about, establish the information requirements and confirm in writing their understandings of what is required. It will also enable the early identification of those projects that cannot proceed due to insurmountable issues, that is, lead to an 'early no'. The subsequent process is, in effect, a conditional approval subject to satisfying the various regulators on the key issues. A pre-lodgement process may not be the most appropriate approach for all quarry applications, irrespective of risk, given it necessarily involves the use of resources to undertake an additional step at the commencement of, or prior to, an application process. Pre-lodgement with all regulators is most appropriate for larger projects, whilst other reforms to streamline processes and requirements for lower-risk projects may be more beneficial.

Draft Recommendation 4.1: Pre-lodgement review

To support efficiencies in the quarry impact assessment process, minimise rework and provide greater transparency and accountability, the Department for Energy and Mining (DEM) provide an optional pre-lodgement process for quarry EML, PEPR and MOP applications modelled on the arrangements for fast-track pre-lodgement approvals in the planning system, noting, among other requirements, the need for:

- early and reliable identification of critical issues by DEM and referral authorities at the start of the process;
- a standard of no more than one further request for information;
- timeframes for assessment and response to be met by DEM and referral authorities; and
- proportionality in the requirements identified in the pre-lodgement meeting.

The performance of revised pre-lodgement arrangements be measured and reported on to determine the extent of net benefit over time, and to identify any potential further improvements in that process.

[59] DEM, *Minerals Regulatory Guidelines 2a - Preparation of a mining proposal for metallic and industrial mineral* (Guideline, 2020) 7.

4.3 Risk and proportionality in quarry assessment processes

The Commission has heard that the complexity of impact assessments in mining proposals, PEPRs and MOPs is not proportionate to the level of risk posed by small-to-medium sized extractives operations. Industry contends that impact assessment requires specialised skills not held by the majority of owner/operators or mine managers. The delays created by small-scale operators reconciling regulators' requirements effectively precludes them from obtaining mining approvals for campaign-type quarry operations in a timeframe that would enable them to supply to regional road upgrade projects.[60] This is not in the state's interest as the result is sourcing construction materials from further afield, adding transportation costs and increasing total project costs.

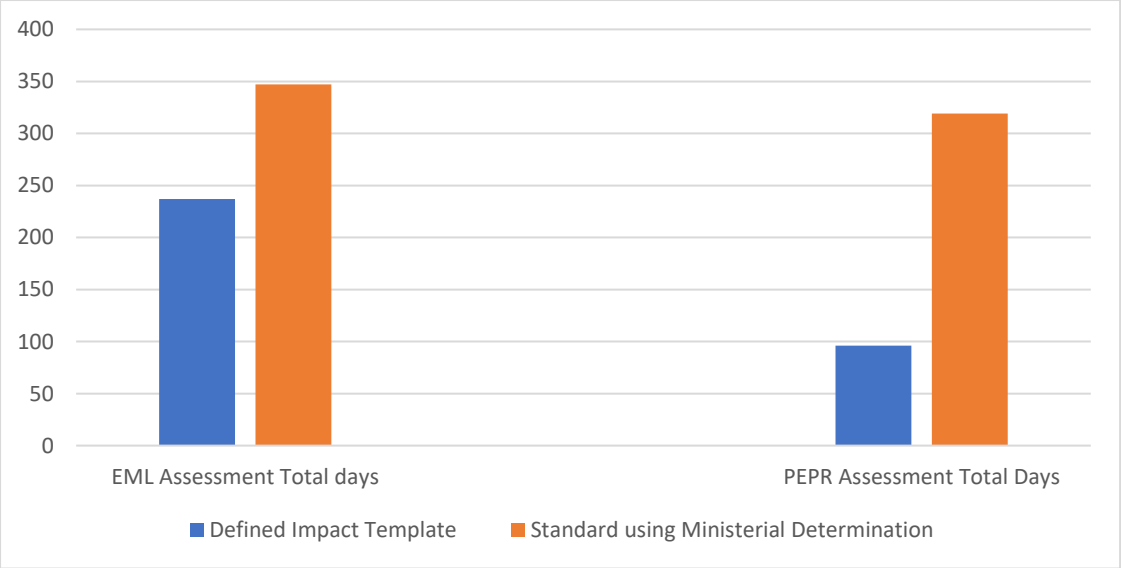
DEM has sought to simplify the assessment process through the introduction in November 2015 of defined impact templates (DIT) (refer to Section 2.1.3). Where eligibility requirements are met the DIT approach is intended to:

- ensure an efficient application process for industry;
- reduce time, effort and cost for industry to prepare mining proposals and PEPRs; and
- reduce time, effort and cost for regulators in assessing and approving applications.

The Commission has heard that operators have benefited from using the DIT:

> *the main benefit [of the defined impact template] being the transfer of information between the mining proposal to the PEPR. This can shorten the approval times which is helpful when trying to get approval of a lease for a specific project.*[61]

Figure 4.2: Comparison of DIT and standard average total days for approval of EML and PEPRs (extractives), 2016–17 to 2019–March 2020



Source: DEM data – SR118: MOP/PEPR Assessments and SR117-PT

Figure 4.2 shows that EML applications using the DIT are on average 110 days faster than those not using the DIT. The greatest reduction in time occurs during the PEPR assessment

[60] Cement Concrete and Aggregates Australia (CCAA), Submission DR4 to South Australian Productivity Commission, *Extractives Supply Chain Review* (30 April 2020). (CCAA submission)
[61] Clay and Mineral Sales submission (n 49) 2.

with an average reduction of 223 days. DEM advised there are examples of DIT PEPRs being approved within 7 days of lodgement. This timeframe could be a consideration when establishing DIT target timeframes.

Table 4.1: Comparison of information required and process of DIT mining proposals and standard mining proposals

DIT mining proposal	**Standard mining proposal**
Information required	**Information required**
• Completion of 13 eligibility questions • 23 questions requiring provision of information • 23 checkbox responses/options for additional information • 4 plans *Total of 38 pages*[62]	• 52 headings where information is required. Some headings require up to 7 separate inputs • 10 headings where information is required for each environmental aspect identified. On average 15 environmental aspects are considered. • 12 maps/plans[63] *Pages dependant on complexity, on average 80 pages*
Assessment process	
The process is the same as outlined in Section 2.1.2	

Source: SAPC

Table 4.1 shows DITs have a simpler information requirement (and lesser burden) compared to the information requirements of the ministerial determinations. The key difference is that the DITs do not require an environmental impact assessment as the impacts have been defined through the eligibility criteria and appropriate outcomes predetermined by DEM.[64] The DIT information requirements are confined to understanding the existing environment, proposed quarry operations, consultation and controls to achieve outcomes.

Despite being recognised as low risk, DIT applications are still required to go through the same assessment and endorsement process as applications made under the ministerial determinations. Industry feedback has identified that the following issues also apply to the DIT:

- The template does not alleviate issues that arise from differences in interpretation of information by individual assessment officers or other agencies during the referral process.
- Timeframes to obtain a mining approval are still a key issue for proponents wanting to participate in tender opportunities for regional infrastructure projects.

[62] DEM, *Defined Impact Mining Proposal Template* (2015).
[63] Ministerial Determination 3 (n 15)
[64] MG23 (n 27).

A quarry code of practice was raised in feedback as a way to further streamline regulatory requirements for lower-risk quarry operations by confining or negating the requirement to obtain an impact assessment, or even an approval if adopting a notification-only approach. A code of practice is a type of quasi-regulation that is intended to 'influence the behaviour of businesses, community organisations and individuals'.[65] It is usually developed collaboratively between industry and government and criteria are used to determine the scope of its application. Codes of practice may include general statements of principle and advice or can include detailed business practices if there are specific standards to comply with.[66]

In Victoria and Tasmania codes of practice provide practical standards required of small-scale quarry operators.

Table 4.2: Interstate codes of practice

Jurisdiction	Code of practice
Victoria	Since 1 January 2010, quarries less than 5 hectares in area and less than 5 metres in depth (and no blasting or native vegetation clearance occurs) are exempt from the work plan requirements in the *Mineral Resources (Sustainable Development) Act 1990* (Vic).[67]
Tasmania	Quarry Code of Practice, May 2017.[68] Documents acceptable environmental guidelines for quarrying to promote industry self-regulation. The sections of the code are not in themselves legally enforceable; however, provisions of the code can be enforced as permit conditions by issuing Environment Protection Notices.

Source: as cited.

The Victorian code of practice for small quarries (the Victorian code) has been put forward by industry as a model that could be adopted in South Australia:

> *Boral also advocates for a fast track approval process (or self-regulation subject to criteria) for high performing operations. Victoria, for example, has prepared a Code of Practices for small quarries which, subject to certain mandatory minimum requirements, are exempt from the requirement to work to an approved Work Plan (the PEPR equivalent). The opportunity to set specific conditions for performance (e.g. hazard or harm) or other requirements relating to operational activities and rehabilitation would also provide flexibility to adjust operational plans, where appropriate*.[69]

The Commission notes that the Victorian code does not apply to quarries that are less than one hectare in area and less than two metres in depth. These quarries are exempt from

[65] Commonwealth of Australia, Department of the Prime Minister and Cabinet, *The Australian Government Guide to Regulation* (Guide, 2014) 28.
[66] Ibid.
[67] Victorian Government, Earth Resources, *Code of Practice for Small Quarries* (web page, 1 June 2020) <https://earthresources.vic.gov.au/legislation-and-regulations/guidelines-and-codes-of-practice/code-of-practice-for-small-quarries#rehabilitation> (Victorian Code of Practice)
[68] Tasmanian Government, Mineral Resources, *Quarry Code of Practice* (web page, 20 May 2020) <https://www.mrt.tas.gov.au/portal/quarry-code-of-practice>
[69] Boral submission (n 44) 3.

regulation under the *Mineral Resources (Sustainable Development) Act 1990* but may still require planning approval before operations can commence.[70] This approach would potentially benefit operators seeking to supply material to regional road upgrades from a short-term campaign quarry in SA. The Commission is interested in establishing whether there is a feasible triage-based approach inclusive of notification only (code of conduct), a simplified template, and impact assessment pathways. A notification-only option could increase agility in responding to Department of Planning, Transport and Infrastructure (DPTI) road tenders at short notice.

DEM has indicated that during development of the DIT a code of practice was considered to support streamlining assessments for lower-risk quarry operations. However due to the requirement for all EML applications to be made with a mining proposal,[71] and operational approvals to be obtained through a PEPR,[72] the DIT was considered the best way for DEM to streamline small-scale applications within existing legislative requirements.

Industry considers that DIT processes could be further shortened, and that eligibility to use the DIT could be expanded to include larger quarries.

> *we believe there is virtually no risk with further expanding the scope of potential quarry operations which might be eligible. Indeed, even the most complex quarry operations are mostly only varied by final landform, layout of the site and services, geological stability and the presence/management of ground water*.[73]

DEM advises that a project to expand the DIT criteria has already commenced. The eligibility criteria will be broadened to allow operators proposing blasting under certain conditions to apply using the DIT. This will allow operators to quarry harder rock that can be used for aggregates suitable for a wider range of road-building applications. Cement Concrete and Aggregates Australia (CCAA) has been regularly updated and DEM offers that a template may be available when a mineral claim is registered. DEM is presently trialling the updated templates with new applicants that meet the eligibility criteria, and proposes to make permanent changes to the DITs by the end of 2020.

The efficiencies arising from the DIT process come from the reduced information requirements, in turn requiring less assessment by DEM. The Commission considers further reductions in DIT timeframes are possible if the assessment process for DITs can be adjusted commensurate with the predetermined outcomes. The Commission sees considerable merit in DEM, in conjunction with industry, establishing an appropriately shortened set of timeframes for approvals and publicly reporting its performance against them.

Information Request 4.1: Proportional low-risk quarry approvals

Industry feedback suggests there is scope to consider further enhancements to the defined impact assessment initiative, particularly in relation to short-life, fixed term and campaign-type quarry operations that support regional infrastructure projects. The Commission invites further feedback regarding:

- implications for the adoption of a code of practice for low risk quarries in SA;

[70] Victorian Code of Practice (n 67).
[71] Mining Act (n 4) s 35(1)(a).
[72] Mining Act (n 4) pt 10A and s 70B.
[73] CCAA submission (n 60) 3.

- expanding the current eligibility criteria enabling the use of defined impact templates; and
- further streamlining of the defined impact assessment process.

4.4 Inconsistency in approach by regulators

4.4.1 Department for Energy and Mining

Within DEM, EML applications, PEPRs and MOPs are assessed by a team of assessment officers with varying levels of industry experience. The Commission has received positive feedback on industry's general experience with the staff from DEM and other co-regulators whose mandates cover the extractives sector. Stakeholders generally acknowledged that, while there are issues with inconsistent approaches, there are staff who have a deep understanding of the sector and engage well with the industry. Industry has welcomed opportunities to work with regulators on recent reforms.

The Commission has heard that there can be inconsistent approaches to a DEM assessment where assessment officers change, resulting in new RFIs and a discontinuity in the assessment process:

> *It becomes even more protracted when there is a change of Assessment Officer halfway through the assessment process or after satisfying all of the required changes the document is sent for review by another member of staff who may have a different point of view and require more changes and additions.*[74]
>
> *DEM regulation officers do a good job … [there is] inconsistency within assessments of Mining Lease Proposals (MLP), PEPR and MOP documents [and] timeframes can be lengthy.*[75]

Inconsistent approaches lead to unnecessary delays for approvals. This section focuses on the issue of consistency and the underlying causes as experienced by proponents.

The Commission heard from industry:

- Less experienced staff can be risk averse and rely on a checklist and 'one-size-fits-all' approach to assessments rather than exercising professional discretion.
- Interpretation of information required for EML applications and PEPRs by the respective ministerial determinations can vary depending on the assessment officer and their particular area of interest or expertise.
- Proponents can experience variations in the level of engagement from different assessment officers, requiring proponents to adapt to different approaches to the same assessment process.

The Commission endorses the view of the Australian Productivity Commission that effective and efficient risk-based regulation requires regulators that:

[74] ePlanning submission (n 45) 3.
[75] Hallett Resources, Submission DR7 to South Australian Productivity Commission, *Extractives Supply Chain Review* (15 April 2020) 1.

> *are accountable and transparent; follow clear and predictable processes; build fit-for-purpose technological and staff capabilities; collect, use and disseminate data effectively; and work to inform the community about their activities*.[76]

Irrespective of how well a regulatory framework is designed, performance is critical to executing the mandate and successfully achieving intended policy outcomes. Inconsistent expectations of proponents by regulators creates uncertainty for operators which can translate to additional time and costs to obtain an approval, or an application not being made at all, leaving construction material in the ground.

The Commission considers the following actions are likely to increase consistency:

- provide enough flexibility in regulation design to enable regulators and quarry operators to respond to risks proportionately. This may be assisted by the drafting of the new regulations;
- provide opportunities for secondments and officer exchange programs within and across different regulators to foster common understandings of how different mandates apply to quarry operations and the supply chain;
- offer training and strategies to lift capability and target skills gaps including technical expertise and risk-based regulation; and
- provide information-sharing opportunities to exchange information between industry and regulators including regular site visits.

Improving consistency can help minimise the risk of delays and uncertainty. Greater certainty and transparency in assessments for all quarries would be welcomed by the industry. According to information provided to the Commission by DEM:

- Approximately 50 per cent of the mining assessment team's full-time equivalent hours are dedicated to extractive assessments.
- The majority of staff members dedicated to extractive assessments have less professional experience, which appears likely to reduce the effectiveness of pre-lodgement meetings.
- During 2018–19 EML applications were 81 per cent of total mining lease applications, compared with 38 per cent in 2015.
- Extractives PEPR/MOP assessments on average over the past five years have been 51 per cent of the total, with 116 programs assessed.[77]
- All eight assessment officers report directly to the Deputy Director of Mining Assessments.[78]

The Commission heard that the compliance team within DEM has a dedicated team leader who oversees compliance officers working on extractives.[79] This role has had the effect of

[76] Australian Productivity Commission (n 8) 2.
[77] DEM data – *SR117- All MLA Assessments* – printed on 11/05/2020 and *SR118: MOP/PEPR Assessments* – printed on 27/04/2020.
[78] DEM information provided on request (May 2020) based on proportion of full-time equivalent roles in the Mining Regulation Branch.
[79] DEM information provided on request (May 2020) based on Mining Regulation Branch Organisation Chart.

increasing efficiency by reviewing documents prior to consideration by the delegate and providing leadership to ensure consistency in the approach to compliance.

In recent years the number of combined extractives assessments as a percentage of the total has increased. The high volume of assessments and number of officers involved in assessing extractives is likely to be a contributing factor to the inconsistency experienced by industry. The flat structure of the assessment team and current delegations have resulted in the Deputy Director of Mining Assessments being responsible for all information requests, including those for major metallic mines.

Draft Recommendation 4.2: Set and report target timelines for approval and publicly report performance against those targets

In order to raise the productivity of the regulatory process, the Department for Energy and Mining (DEM) adopt a new target setting and reporting process for timelines for approvals and reviews in the DEM-led process that:

- starts with the current targets but adopt goals for further reductions over 3 years;
- incorporates and reports on this key performance indicator of the agency; and
- makes DEM accountable for the internal organisation arrangements and changes, including workflows, that are needed to reach those goals.

4.4.2 Referral agencies

The Commission heard that the level of detail required by referral agencies can also be inconsistent with DEM requirements:

> *In some instances, getting a lease approved can be a long and expensive process … information required seems to change over time. This may be a combination of different people (DEM and other government agencies) reviewing the document and regulations/determinations coming into effect during the process … certain issues (for example water) taking on greater significance that they might need to.*[80]

Industry provided specific examples where referral agencies have required a level of detail not previously required by DEM at the beginning of the application process and the Commission accepts the veracity of that evidence. The Commission understands that, while DEM defines the scope of a referral, the referral agency may adopt a different scope given their independent regulatory mandate. This can result in additional requests for information, causing frustration for proponents. There may be several reasons why referral agencies adopt a different scope than DEM including legislative mandate, capability, agency culture and levels of experience of the officers involved. Resolving these inconsistencies is, in the Commission's view, a matter for senior leadership of the regulators. In particular, the boundary of the decisions or advice required from referral authorities by DEM as the lead regulator needs to be clarified to avoid unnecessary RFIs as a result of misunderstanding or regulatory creep.

The Commission heard groundwater assessments have been the cause of some frustration to proponents where inconsistent approaches by regulators resulted in some proponents

[80] Clay and Mineral Sales submission (n 49) 2.

investing significant resources to resolve groundwater issues whilst other sites of similar size and risk required minimal attention to the groundwater assessment. The apparent failure by the regulators to quickly resolve those inconsistencies before they imposed avoidable costs on proponents is unfortunate and undesirable in the Commission's view. The difficulty of collecting technical water data can inhibit the progress of applications. The Department for Environment and Water (DEW) indicated they take a practical approach and work with operators to find solutions and alternatives within water allocation plans.

The Commission understands through consultation with DEM and DEW that in 2017 both agencies jointly prepared a draft guideline to manage the interaction of the mineral and energy resources sector with water resources in South Australia. For reasons unknown to the Commission the guideline was neither finalised nor released to industry. There may be value in revisiting that work, inclusive of specific reference to the extractives sector.

The referral process between DEM and the Environment Protection Authority South Australia (EPA) is subject to an administrative arrangement created to achieve consistent, collaborative and efficient regulation of the state's mineral resources, especially where the obligations of both parties overlap.[81] The Commission is supportive of the value these arrangements can provide including clarifying the expectations of each regulator, coordinating their internal processes, and connecting up the different regulatory mandates of each regulator, better reflecting the one-door-to-government approach.

Draft Recommendation 4.3: Formalising referral arrangements between regulators

To increase regulatory efficiency for extractive mineral impact assessments and minimise the risks associated with a duplication of responsibility, the Department for Energy and Mining and all relevant referral agencies put in place formal administrative arrangements, authorised by relevant agency Chief Executives, that:

- clarify each agency's regulatory mandate and areas of responsibility;
- specify how areas of joint responsibility will be managed with one regulator;
- specify the decision required from each regulator, with the principle of requiring no more information from a proponent than is necessary to reach that decision;
- provide timeframes for completing referrals, after which if there is no response then the proposal is deemed to comply;
- provide a procedure to escalate matters quickly to the final decision maker where regulator delegates are unable to resolve any tensions in areas of responsibility impacting on the progress of an impact assessment application; and
- specify the frequency of reviewing and updating the administrative arrangement.

A key underpinning principle of the arrangements is to balance a proportionate level of prescription to support practical and expedited referral activity with retaining delegates' ability to exercise transparent professional discretion under their respective mandate.

[81] DMITRE MRD and Environment Protection Authority, *Administration Arrangement* (2013) 2.

4.5 Public consultation

For the purposes of the review, 'public consultation' incorporates:

- consultation that is facilitated by regulators and/or by the proponent;
- formal or informal engagements; and
- face-to-face interactions or written submissions.

Public consultation may be done to seek public comments as part of the approval process or to respond to issues or concerns raised in the assessment process. There are specific statutory obligations and expectations by regulators for public consultation that form part of an application to establish or change a quarry operation. Statutory requirements for public consultation in the *Mining Act 1971* include:

- Section 35A prescribes publication of mineral lease mining proposals (including extractive mineral leases) for consultation.
- Section 73G(8) prescribes publication of parts of a draft MOP for new operations.
- Environmental outcome requirements for quarrying and mining must be developed following stakeholder consultation (regs 30(1)(c), 49(1)(c) and 65(2)(a)).[82]

DEM advises that consultation with stakeholders comprises consultation with the landowner and with 'any other person who may be directly affected'[83] where

> '*affected community' refers to the members of the community affected by a company's activities … most commonly social (eg resettlement, changed services such as education and health), economic (eg compensation, job prospects, creation of local wealth), environmental and political*.'[84]

Some guidance is provided on stakeholder engagement in DEM regulatory guidelines on the importance of obtaining a social licence to operate. It indicates that early, effective and ongoing consultation will increase the likelihood of stakeholder acceptance, build trust in the community, provide greater transparency and clarity of information about the potential impacts, and manage speculation that may arise due to incomplete information.[85] DEM guideline MG4[86] focuses on landowner rights and access rather than other affected parties.

The Commission generally considers this advice to be appropriate and consistent with the general approach to regulation set out by the Department of the Prime Minister and Cabinet Best Practice Consultation guidance note.[87]

Public consultation and stakeholder engagement issues raised in submissions and consultation include:

- There is variable capability across different extractive operators/owners to undertake effective public consultation or engagement.

---

[82] MG30 (n 1) 5.
[83] Ibid 10.
[84] Ibid 21.
[85] Ibid 10.
[86] DEM, *Landowner rights and access arrangements in relation to mineral exploration and mining in South Australia*, Minerals Regulatory Guidelines MG4 (2014).
[87] Department of the Prime Minister and Cabinet, *Best practice consultation* (Guidance Note, 2020) <https://www.pmc.gov.au/sites/default/files/publications/best-practice-consultation_0.pdf>

- Consultation can unduly influence community expectations on what the relevant issues are and how they may be addressed.
- Public consultation requirements can be disproportionate to the potential consequences or risks.
- Responses to issues raised through public consultation need to balance the broader strategic significance of a quarry resource, i.e. consider the state's interest.
- The minimal publication requirements for MOPs reduces the effectiveness of public consultation.

4.5.1 Capability and public consultation

Industry stakeholders have generally acknowledged the importance of effective public consultation in establishing and maintaining community acceptance of their operations (the social licence to operate[88]). The regulatory requirements necessary to obtain approval to establish, operate and close a quarry include consideration of community expectations and other public interests. In that regard, a social licence to operate supports an effective regulatory regime.[89]

> *we agree that community consultation is justified in cases where there has been a significant change in the mining operation which could have an impact upon the local neighbourhood/community.*[90]

Industry stakeholders also generally accept that a proponent needs to engage early and seriously with communities.[91] The Commission has heard that the level of capability to undertake effective public consultation varies widely across the sector. Some quarry operators go beyond what is required, while others undertake minimal consultation on proposed quarry activities. The Commission heard from industry stakeholders concerns about consultation being undertaken in good faith being subject to campaigns by special interest groups, rather than engaging with individuals and communities directly affected by the proponent's project. Industry has said that a proponent's previous experience with public consultation, their planning processes and the amount of resources they dedicate to consultation will affect the level and value of public engagement. Regulators share this view.

Regulators advise that effective community engagement can provide cost-effective outcomes for industry. Examples were provided where a lack of early and effective engagement led to protracted and ongoing complaints resulting in long-term remedial control measures at significant cost to address complaints.

The Commission has heard that industry's ability to engage in public consultation can be impacted by:

- government (state and local) influencing community expectations on what can or cannot be achieved – sometimes raising expectations on issues outside of the operator's control (e.g. regulatory process issues);

[88] Commonwealth of Australia, Standing Committee on Industry, Innovation, Science and Resources, *Inquiry into how the mining sector can support businesses in regional economies* (2018) [6.2].
[89] See the tenement holder requirement to prepare a PEPR pursuant to Mining Act s70B.
[90] ePlanning submission (n 45) 1.
[91] CCAA submission (n 60) 4.

- changes that are made to a proposal during the approval process in response to regulators' requirements and/or delays, which then creates confusion and a disconnect with the community who were consulted on the original proposal;
- the timing of public consultation in the application process;
- public engagement requirements that are disproportionate to the risk and impact of the project proposal – particularly where a proponent may have received informal approval from stakeholders directly impacted (e.g. the landowner and/or local authority);
- government planning decisions for new developments (residential, infrastructure or industry) on land adjacent to an existing quarry that have not taken into consideration the potential for longer-term land use conflicts; and
- the ability to apply a proportionate and balanced response to issues focused on stakeholders who are directly or materially affected.

> *The way in which Government communicates expectations and responds to issues from the community can significantly affect the community's position as a whole. In many cases, the individual company is left to defend community complaints that are often about Government process and not within the control of the company.*[92]

The Commission has heard from industry about the complexity of effective and proportionate public consultation. For example, public consultation on an EML application (adjacent to an existing unworked EML) to develop a more appropriate method of extracting the resource resulted in 882 public submissions – many of which were copied form letters raising issues that had already been addressed in the mining proposal.

Public consultation requirements for applications and disproportionate and irrelevant responses to the issues raised (including complaints) can absorb resources and add significantly to timeframes and costs.

> *tenement holders of existing mines/quarries are asked to provide a new/updated PEPR or MOP for an existing operation (which in many cases has been operating for decades) they are told they must 'consult' with the local community) … this often provides a focus for people to find issue with the mine who previously were oblivious to its operation and had no issues or concerns with it … we agree that community consultation is justified in cases where there has been a significant change in the mining operation which could have an impact upon the local neighbourhood/community.*[93]

4.5.2 Consultation for different tenement types

The Commission understands there are different publication requirements for extractive mining proposals depending on whether the quarry site is, or will be, on an EML or a private mine:

- Section 73Q of the *Mining Act 1971* requires an MOP (for a private mine) to be registered on the mining register; however only the proprietor's name, mine location and an extract showing the objectives and criteria must be made available for public inspection.

[92] Ibid 4.
[93] ePlanning submission (n 45) 1.

- The complete mining proposal for an EML will be published for public inspection.

DEM considers that the publication of the objectives and criteria of an MOP with contextual information about the proposed quarry size, location of actual operations within the quarry site, hours of operations or strategies to achieve the objectives promotes meaningful public consultation. The Commission agrees.

The *Statutes Amendment (Mineral Resources) Act 2019* was passed on 17 October 2019 and includes a range of amendments to the legislative requirements for private mines including:

- Part 11B will be retained (continuation of a separate regulation for private mines).
- All private mine MOPs will transition to PEPRs after 15 years.
- A revised definition of the environment is to apply to all private mines in the same way that it applied to all other tenement types except for specified words regarding aesthetic or cultural value.
- Compliance tools in part 11B have been updated and expanded including a new emergency power with respect to an environmental emergency and removal of language that qualified a mine holder's obligations to avoid environmental damage.
- All offences and penalties applying to other tenements will apply to private mines in the same way (with the exception of continuing offences).

The Commission understands consultation on the draft regulations will occur in the third quarter of 2020.[94]

Public consultation is a foundation to obtaining, and maintaining, community understanding and acceptance of a quarry's operations. Effective consultation can reduce the risk of costly delays or projects not proceeding by:

- providing a way for stakeholders to inform the operator of their concerns;
- providing an opportunity for the operator to address those concerns before operations commence;
- helping communities adapt to forthcoming changes; and
- minimising the risk of issues arising further down the track.

Based on what the Commission has heard to date, the key issues regarding the effectiveness of public consultation and the extractives industry are the:

- level of skill and expertise (capability) of the organisation tasked with undertaking the public consultation;
- early identification of what needs public consultation and when; and
- proportionate responses to public consultation.

Disproportionate approaches or responses to public consultation are symptomatic of an inflexible regulatory framework and poorly applied practices. Ineffective or poorly executed

[94] DEM, *Update on Mining Regulations 2020* (web page, 18 May 2020) <http://www.energymining.sa.gov.au/minerals/mining/update_on_mining_regulations_2020>.

public consultation can lead to disconnections between public expectations and achievable outcomes, and can exacerbate the existing pressures on quarry operations and resources, particularly issues of proximity to other sensitive land uses.

Information Request 4.2: Public consultation

The Commission considers current public consultation arrangements can be improved, including by guidelines for public consultation clarifying:

- when consultation is appropriate;
- who has standing in the consultation, such as people and businesses directly affected by the proponent's proposal; and
- principles and standards for consultation.

The Commission seeks views on this matter and on approaches to best practice consultation.

4.6 Assessment application timeframes

The time taken to obtain approvals to establish a new quarry, or expand the capacity of an existing quarry, has emerged as a key theme. To a large extent the time taken for an approval depends on the issues set out earlier in this chapter. To that end the Commission anticipates that improving timeframes for proponents, and increasing the efficiency of regulators in undertaking assessments, will result from the implementation of the Commission's recommendations regarding those preceding issues. This section is about understanding the gamut of issues, the views of industry and quarry operators, and considering how the costs and consequences of delay can compromise the state's interests through quarry operators' missed opportunities.

Whilst industry stakeholders state they accept the need for environmental and safety requirements, they are concerned about delays in processing applications, which they consider have contributed to lost commercial opportunities and investment in SA. These delays have both local and state-wide effects: a proponent misses the opportunity to tender for a specific infrastructure project because of delayed processes, and supply of the raw construction materials for the infrastructure project come from more expensive (distant) sources. South Australians as a whole pay for this additional cost and inefficiency.

> *Applications are not being made. This is particularly common in regional areas where a quarry may only be viable based on a particular Government project, yet as a result of the timeframe required to prepare, submit and assess an application being incompatible with the timeframe of the Government infrastructure project, these quarries do not materialise*.[95]

The issues raised regarding timeframes to obtain an EML or PEPR/MOP approval include:

- An application to expand a relatively low-risk existing quarry took more than a year to process.

[95] CCAA submission (n 60) 2.

- There can be limited or no communication with proponents about the progress of an application, why it has not progressed, and expected completion date.
- Approvals required from referral agencies can add considerably to assessment timeframes (see previous sections).
- Misalignment of timing between obtaining the applicable mining approval and the DPTI quarry pre-qualification timeframes can preclude small operators from regional tendering opportunities.
- Eligibility to apply the 'defined impact' approach to low-risk, low-impact operations could be further expanded to cut timeframes for applications.
- Industry has concerns regarding the practical value of the target timeframes used by DEM to measure timeliness performance.

Industry stakeholders have been critical of delays or unanticipated changes to timeframes and their consequences. They include:

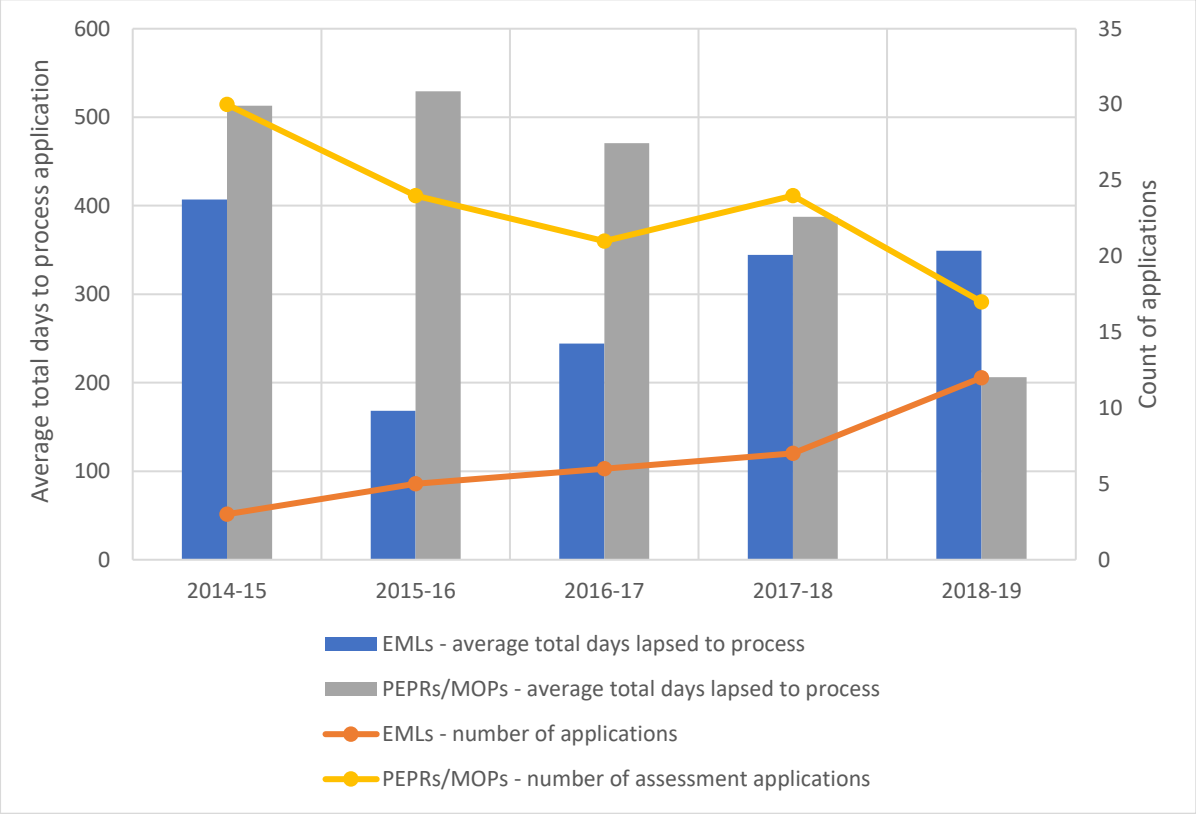
- foregone income opportunities as operators are unable to supply to market whilst awaiting the outcome of their application(s);
- diversion of investment – particularly for larger operators who are able to divert investment to opportunities interstate or overseas; and
- unanticipated changes to operational requirements arising from the requirements of co-regulators.

4.6.1 Measuring timelines

Figure 4.3 below provides the average days taken to process EML and PEPR/MOP applications, with applications assigned to the financial year in which they were lodged/submitted. All applications, irrespective of their status (e.g. approved or not) are included. Average days elapsed calculations are based on the time taken to complete the application process. Figure 4.3 indicates that:

- Overall the number of days taken to process an EML has declined in the past five years whilst the number of EML applications has gradually increased.
- Both the number of applications and the time taken to process PEPR/MOP applications has fallen in the last five years.

Figure 4.3: Average total days taken to process EML applications and PEPR/MOP assessment applications per annum, 2014–15 to 2018–19[96]



Source: DEM data SR117-PT: All MLA Assessments and SR118: MOP/PEPR Assessments

The Commission's analysis of the DEM data shows that in the five years to 2018–19:

- 61 per cent of all applications for EMLs were processed within the six-month target timeframe.
- 42 per cent of all PEPRs and MOPs met the three-month target timeframe.

According to the most recently published data key factors associated with approval timeframes have been 'recent resourcing constraints' and the additional work required to review and update PEPRs for existing mines (which requires an impact assessment) so that they align with current legislation, standards and expectations.[97]

The Commission considers that application processes that achieve target timeframes only around half the time are unsatisfactory, notwithstanding the suggestion of an upward trend during that period in Figure 4.3. The apparent performance underscores the need for a range of actions to improve this situation, including triaging applications on a risk/complexity basis, streamlining the assessment process, lifting staff skills and removing bottlenecks in the decision-making process.

Industry expressed concern over the limitations of this timeline data as a performance measure:

[96] Financial year dates based on date of submission/application to DEM.
[97] Mineral resources regulation report (n 12) 44.

- End-to-end processes from pre-lodgement through to commencement of operations are not measured.
- It is subject to 'stop the clock' provisions whereby measurement stops when an application is withdrawn and restarts when, and if, it is resubmitted.
- The target timelines currently used to measure good practice (six months for processing EMLs and three months to process PEPRs) are too long for commercial purposes and in any event are only being met around half the time.

> *Statistics do not bear out the concerns that our members have regarding the difficulty to bring quarry projects to fruition in a timely manner*.[98]

> *Applications being withdrawn and resubmitted. This skews the approval timeframe statistics*.[99]

The Commission notes that the target timelines show the time an application is with DEM. There are no target timelines used to measure the end-to-end process.

> *Excessive DEM approval timeframes … Boral recommends the introduction of industry benchmarking for mine approvals*.[100]

The Commission sees merit in DEM and the industry co-designing a relevant and appropriate set of timeframes and performance measures in support of Recommendation 4.2 to help improve regulator performance and increase industry confidence.

4.6.2 Co-regulator requirements

A quarry operator may be required to obtain approvals from co-regulators during or after obtaining approvals under the Mining Act. For example, DEM advises that, whilst most native vegetation clearance requirements are completed as part of the PEPR process under DEM's delegated authority from the Native Vegetation Council, EPA licensing generally occurs after the approval of a PEPR once the quarry operation reaches a certain production threshold. These concurrent processes can cause delays and uncertainty. Variations to quarry operations arising from co-regulator requirements can be unanticipated and unplanned, costing the proponent additional time and money.

4.6.3 Misalignment of timeframes and tendering opportunities

In order to submit a conforming tender for a government construction or infrastructure project, the quarry to be used in that tender must be approved for pre-qualification by DPTI. Several industry stakeholders provided evidence to the effect that there is misalignment between the time taken to approve the establishment and operation of a quarry under the Mining Act, and the time taken to obtain a DPTI pre-qualification for a quarry. This leads to lost business opportunities for local businesses, and additional costs to the project by having to truck in material from an established 'pre-qualified' quarry from further away. This matter generally affects regional road projects where a proponent seeks to establish or extend a quarry close to the site.

In one specific example provided to the Commission, the quarry operator, despite best endeavours by DEM, was unable to obtain pre-qualification to participate in the tender

[98] CCAA submission (n 60) 2.
[99] Ibid 3.
[100] Boral submission (n 44) 1.

process in time. The successful contractor obtained the construction material from a resource further away at significantly higher cost to the government.

Some proponents considered that for these small-scale, short-term operations the simplified defined impact approach is still disproportionate and incapable of providing an approval in time to support tendering despite significant efforts by DEM to accelerate the approval. Prospects of introducing a code of practice and/or expanding the scope of the defined impact process were explored earlier in this draft report (see Sections 3.2 and 4.3).

The Commission also heard that, whilst the pipeline of regional infrastructure projects may be advertised well ahead of calling for tenders, in practice there is only a short period of time between when a specific project is funded and the tender put to market. Moreover, the short lead time compounds the challenge of obtaining the applicable mining and DPTI pre-qualifications required to tender. Industry stakeholders also advised that maintaining a portfolio of strategically sited and pre-approved EMLs is commercially unviable, and it was not possible to lawfully drill for samples to accelerate DPTI's pre-qualification requirement.

The Commission has been advised that where operators have reached out directly to DPTI and DEM in an attempt to obtain all applicable approvals those agencies have been responsive. However, these challenges are systemic and act as market barriers and it should not be necessary for operators to chase regulators for approvals that are likely to result in a positive budget impact for the state.

A specific example was cited to the Commission where a foregone tender added $30–$40 per tonne in transport costs for a job that required delivery of 100,000 tonnes. Had the tender to supply that project from a closer quarry been successful, it was asserted the transport cost would have been $7 per tonne, a potential saving of up to $3.3 million which represented 22 per cent of the cost of the infrastructure project.

Draft Recommendation 4.4: Establish a streamlined option for quarry product pre-qualification

In order to reduce delays in the pre-qualification process, the Department of Planning, Transport and Infrastructure:

- allow extractives proponents to:
  - contract out testing to approved private laboratories; and
  - have the option of proving either that materials meet specifications of shape, strength, form etc or else that materials available meet performance standards in use; and
- create the option for accepting a tender pending pre-qualification.

5. Quarry operations, rehabilitation and closure

5.1 Introduction

This chapter addresses the regulatory issues that follow the approvals of the mineral claim, extractives mineral lease (EML) and Program for Environment Protection and Rehabilitation (PEPR). These issues primarily relate to operations and closure. The chapter starts with consideration of co-regulation applied to activities undertaken in the normal course of quarry operations. Industry reported that the control measures and other requirements these regulations can impose, particularly the extent to which they interact with mining approvals, create confusion and additional costs for proponents.

This is followed by examination of issues relating to rehabilitation of quarries, closure arrangements and post-closure land use. This analysis includes the government's indemnification against operator non-performance in relation to rehabilitation, with a focus on the Extractive Areas Rehabilitation Fund (EARF) and industry's access to it.

A detailed discussion of proximity issues completes the chapter, tying in the preceding sections and exploring how the regulation of quarries and supply chain activity can be disproportionately affected.

5.2 Co-regulation: environmental licensing, transport and explosives

Some quarry operations and key parts of the supply chain are subject to regulatory mandates other than those covered by the *Mining Act 1971* (Mining Act). For example, crushing may create externalities in relation to air quality (dust) which, whilst regulated through the quarry's environmental program, is also regulated by environmental licensing under the *Environment Protection Act 1993* (EPA Act). Activities that may be subject to an Environment Protection Authority (EPA) licence are set out in Schedule 1 of the EPA Act. Other co-regulation considered by the Commission includes the regulation of transport and road network access such as the *Heavy Vehicle National Law (South Australia) Act 2013* (SA), and explosive-related regulation, namely the *Explosives Act 1936* (SA).

Co-regulation is relevant to this review to the extent that it imposes concurrent regulatory requirements with which a quarry operator must comply, separate from the Mining Act, to operate effectively and lawfully. Co-regulation is distinguishable from the referral process (set out in Chapter 2) where technical information and expertise is sourced by the Department for Energy and Mining (DEM) from other regulators as part of an impact assessment and granting a lease or operating approval under the Mining Act.

5.2.1 Environmental regulation and licensing

Three main areas of environmental co-regulation impact on quarry operators: EPA environmental licensing, Department for Environment and Water (DEW) water licensing and DEW (Native Vegetation Council) native vegetation clearance requirements. Department of Planning, Transport and Infrastructure (DPTI) (transport and road network access) and Natural Resource Management Boards also cover quarry and supply chain activities.

Several examples were raised with the Commission to support the contrasting views set out in this section. Some of this material was assessed by the Commission as being confidential on commercial or other grounds.

Achieving contemporary environmental outcomes: air quality

The Commission has observed that quarry air quality requirements are regulated by both DEM through Mining Operation Plans (MOPs) or PEPRs, which can include air quality in their environmental objectives and criteria, and the EPA through their policy and licensing arrangements.[101] The Commission understands that DEM customarily adopts the EPA air quality policy as a benchmark.

The Commission notes the experience of Sellicks Hill quarry illustrates co-regulation on environmental outcomes, specifically air quality. Following community complaints primarily about dust since 2011, the EPA revised the prevailing EPA operating licence conditions for Sellicks Hill quarry in 2016 to include the requirement of a dust management plan[102] following an extensive period of air quality monitoring. The dust management plan has subsequently been revised several times and significant control measures in the form of infrastructure to cover activities (e.g. a crusher) and materials (sand stockpile) have been introduced.[103] EPA has indicated that its expectations were based on EPA benchmarking against other similar sized operations and mitigation measures deemed reasonable and of good practice.

DEM advised that the environmental objectives and measurement criteria in the Sellicks Hill quarry MOP pre-dated the EPA's 2016 intervention. The MOP was subsequently reviewed and updated to include contemporary environmental objectives and measurement criteria.

DEM has suggested that the design of the objectives and criteria in MOPs[104] approved prior to MOP requirements being prescribed in the *Mining Regulations 2011* (Mining Regulations) are not based on the contemporary impact assessment framework.[105] This limits the ability of DEM to regulate to achieve contemporary environmental outcomes. This notion has been picked up in several legislative amendments in the *Statutes Amendment (Mineral Resources) Act 2019*, which include broadening the definition of 'environment' for private mine tenements, which is narrower than the definition applicable to other tenements under the Mining Act. This definition is critical to the scope of issues capable of being regulated, and supports the impact assessement process. Other limitations addressed in the new Act relate to MOP reviews, the conduct of authorised investigations and the general duty to avoid undue damage to the environment.[106] Another significant amendment is the aim to transition MOPs to PEPRs in 15 years' time.[107]

The Mining Act requires that MOPs be reviewed every seven years.[108] The Commission considers that dated objectives and measurement criteria limit the extent to which DEM can

---

[101] EPA, *Environment Protection (Air Quality) Policy 2016* (Policy, 9 April 2020) <https://www.legislation.sa.gov.au/LZ/C/POL/ENVIRONMENT%20PROTECTION%20(AIR%20QUALITY)%20POLICY%202016/CURRENT/2016.-.AUTH.PDF>
[102] Golder, *Southern Quarries Dust Management Compliance Plan – Dust Management Plan* (Report, 6 December 2019) <https://www.epa.sa.gov.au/files/14560_southern_quarries_dust_mgt_plan_dec2019.pdf>
[103] EPA, *Sellicks Hill (Southern Quarries)* (web page, 14 May 2020) <https://www.epa.sa.gov.au/business_and_industry/industry-updates/southernquarries#:~:text=To%20make%20a%20complaint%20or,email%20or%20visit%20their%20website.>
[104] Mining Act (n 4) s 73G(2)(b); Mining Regulations (n 22) reg 80.
[105] Ministerial Determination 3 (n 15)
[106] See for example *Statutes Amendment (Mineral Resources) Act 2019,* s 97(2), amending s73(c)(1) of the Mining Act regarding the definition of environment as applicable to private mines; and s 101 repealing s 73H(3) of the Mining Act that conditioned compliance with the General Duty on meeting MOP objectives.
[107] Ibid sch 1 s 15.
[108] Mining Act (n 4) s 73G(10).

regulate and support a quarry operator to achieve contemporary environmental outcomes, causing some friction among co-regulators.

The Commission seeks further feedback about whether updating environmental programs in existing MOPs or PEPRs will improve DEM's ability to regulate quarries to achieve contemporary environmental outcomes, potentially decreasing the need for intervention by co-regulators. Clearly co-regulators are obliged at all times to exercise their respective mandates that cover quarry operations and supply chain activities. That said, incorporating up-to-date environmental programs would foster more uniform and consistent interaction between regulators and the quarry operators, limiting the need for co-regulators to respond to quarry operations.

DEM advises that it is engaging industry and operators to update older environmental programs, particularly where sites have experienced complaints.

Draft Recommendation 5.1: Updating environmental programs

In order to support improved environmental outcomes, to provide for a more uniform and consistent approach for quarry operators, and to decrease the requirement for co-regulators to intervene in relation to quarry operations, the Department for Energy and Mining audit the environmental programs applicable to all quarries in South Australia to determine environmental programs that require updating.

To manage the impact on the regulator's resources, and in consideration of the potential impact on industry, the audits of environmental programs be prioritised on a risk-based approach, with attention to considerations such as existing proximity issues, complex environmental factors and low risk locations.

Native vegetation

DEM exercises delegated authority from the Native Vegetation Council in relation to its impact assessment processes.[109] Whilst this arrangement does not strictly come within co-regulation as defined by the Commission, the issues raised in relation to native vegetation warrant consideration. Much of the feedback regarding native vegetation related to the impact of significant environmental benefit (SEB) arrangements. The SEB is the scheme giving effect to biodiversity offsetting principles which requires a net environmental benefit following clearance of native vegetation.[110]

Industry argued to the Commission that the SEB can act as a commercial barrier to establishing or expanding a quarry. The expense of the SEB payment option may be significant for smaller mining proposals and low-yield operations.[111]

> *Removing native vegetation when quarrying is a balance between the value of the resource and the value of the vegetation. If the cost of removing the vegetation (even poor quality) is extremely expensive then extractive resources important to South Australia will be sterilised.*

[109] Department for Environment and Water, *Native Vegetation Council* (web page, 28 May 2020) <https://www.environment.sa.gov.au/about-us/boards-and-committees/native-vegetation-council>
[110] Department for Environment and Water, *Offsetting* (n 7).
[111] See for example PGH Bricks and Pavers, Submission DR9 to South Australian Productivity Commission, *Extractives Supply Chain Review* (17 February 2020) 1.

> *Native vegetation rules have changed in the last few years making it more financially difficult to obtain resources.*[112]

An example was cited where the regulator-imposed outcomes over and above those determined by an independent expert assessment including a higher SEB payment and additional fauna surveys, creating frustration and potentially significant additional costs.[113] While the Commission understands the SEB may require expenditures by proponents, it considers this facility is relatively simple and efficient.

Information Request 5.1: Native vegetation offsetting requirement and commercial impacts on quarry operations

Industry indicate that the costs associated with the requirement to provide significant environmental benefit (SEB) to offset the impacts of clearance activity can act as a commercial barrier to establishing or expanding quarry operations. The Commission invites further detailed feedback to get a better understanding about the number of quarries that have been affected by the SEB and the volume of extractive mineral resources that have become commercially unviable to quarry as a result.

Extended use of delegations

On a number of occasions in this report, the issues associated with the presence of co-regulators have been identified. They mainly concern the interaction between DEM and other regulators either in the approval process or during operations. They include delays, the time and cost of responding to information requests, inconsistencies between projects and consequently greater levels of uncertainty.

The treatment of native vegetation issues suggests another approach is possible. This means authority could be delegated to DEM in other areas of environmental performance. DEM would not be the standard-setting body, since that responsibility lies with another regulator. However, DEM would be given the task of implementing the current standards set by that other regulator. At the same time, the other regulatory agencies would retain authority to intervene, as required by their statutory responsibilities. But if there was a prompt to intervene, for example, in response to public complaints about certain matters, then the first step in that process would be to seek information from DEM.

These processes would be confirmed in the development of memoranda of understanding between DEM and the co-regulators. The feasibility of this approach will depend on the prior implementation of Recommendation 5.1 to update the environmental performance expectations in existing approvals.

Draft Recommendation 5.2: Delegations

To further improve the performance of co-regulation during operations, other agencies with statutory responsibility for environmental performance linked to quarrying establish risk-based administrative arrangements with the Department for Energy and Mining for the latter to act as their delegate:

[112] Clay and Mineral Sales submission (n 49) 2.
[113] See for example ePlanning submission (n 45) 4–5.

- implementing, for simple cases as determined by co-regulators, contemporary standards set by those co-regulators;
- while referring to the co-regulator all other cases.

5.2.2 Transport and road network access

The Commission has so far considered transport in terms of the economic implications of transporting construction materials, and how this is influenced by mining approvals and tendering processes. In this section the Commission considers the regulation of transport and access to the road network, and how that relates to productivity in the extractives industry supply chain.

The Commission has heard that road network access can influence the efficiency of the transport of construction materials. The ability to get material out of the quarry and delivered to infrastructure projects can be subject to several road network access constraints.

The CCAA considers most construction materials are:

> *transported by heavy vehicle in relatively short distances in urban and peri-urban areas (e.g. under 60km per delivery for aggregates and under 15km for pre-mixed concrete). There are about 100,000 average heavy vehicle movements in Australia per day (usually during daylight hours) relating to our industry. Our industry contributes up to 10% of total road freight by volume.*[114]

The Resource Area Management and Planning (RAMP) Project final report from 2014 identified that:

> *access and transport is an essential consideration for all types of mining … depending on the location of the mine and the nature of the transport required (type, size and delivery hours), transport and access can represent a critical set of interface issues.*[115]

Heavy vehicle (strategic) transport routes

South Australian roads are either arterial or local roads, which determines the applicable authority (state or council respectively), and are functionally classed by the relevant authority (the road manager).[116] Given the diversity of locations of quarries and end users (infrastructure projects), construction materials may necessarily need to be transported on state and council roads, in metropolitan and regional areas, and on several different types of transport corridor, i.e. a 'major traffic route', a 'freight route' and 'peak hour routes'.

The National Heavy Vehicle Regulator (NHVR) administers the Heavy Vehicle National Law (HVNL) for vehicles over 4.5 tonnes gross vehicle mass and regulates access to the road network for those heavy vehicles. The HVNL is given effect in South Australia through the *Heavy Vehicle National Law (South Australia) Act 2013* (SA) (HVNL Act) and several state regulations. Restricted Access Vehicles (RAV) are prescribed heavy vehicles permitted to be

[114] Cement Concrete and Aggregates Australia, 'Submission: A risk-based approach to regulating heavy vehicles' *National Transport Commission* (Submission, 31 May 2019).
[115] RAMP Report (n 41) 63.
[116] Department of Planning, Transport and Infrastructure, *A Functional Hierarchy for South Australia's Land Transport Network* (Report, 2013).

used on parts of the road network approved for RAV use, which is accessible through DPTI's RAVNet interactive online map system.

Cement Concrete and Aggregates Australia (CCAA) considers that construction material transport routes need appropriate protection to ensure the flow of construction materials. CCAA proposed buffer zones be used for transport routes to minimise conflict with other competing land uses.[117]

> *The use of strategic transport routes by heavy vehicles associated with the mining industry needs to be fundamentally accepted.*[118]

The Civil Contractors Federation was concerned about road access restrictions for heavy vehicles including access to local roads requiring council approval. Load limits on ferries in regional locations and approach roads can require longer routes to be used, adding to costs. The movement of plant on the road network was raised in the context of inconsistent regulations applying to pastoralists and quarry operators, even though the two industries' road network usage and risks are comparable.

The apparent similarities and regulatory disparities between pastoralist and miner access to the road network was raised by several stakeholders. The Local Government Association stated that many roads will already have to be at a standard that is suitable for large farm machinery and therefore are also likely to be suitable for some heavy mining vehicles. The Commission notes prescribed commodity routes enable a modified standard to apply (i.e. access by a more efficient, larger vehicle combination such as a B-Double) but must still meet certain standards to protect the road infrastructure and ensure road safety. Commodity routes are limited to seasonal operation only, are restricted to transporting prescribed commodities, and attract time restrictions to minimise environmental and amenity impacts, and speed restrictions to prevent infrastructure damage and maintain vehicle stability and safety on rough or unsealed roads.[119]

The Commission considers the commodity route concept merits exploring, for example applying a modified road network access standard for the transport of extractive minerals from campaign or otherwise fixed-term quarrying operations.

Information Request 5.2: Modified road network access for extractive mineral transport

The Commission seeks more information to quantify the potential productivity gains that could come from more efficient vehicles to transport construction materials on parts of the road network where their access is not currently authorised.

What process would be required to assess and potentially establish a modified road network access scheme for the transportation of extractive minerals in South Australia based on the principles that underpin South Australia's commodity routes?

[117] CCAA submission (n 60) 2.
[118] RAMP Report (n 41) 63.
[119] SA.GOV.AU, *Commodity freight* (web page, 12 May 2020) < https://www.sa.gov.au/topics/driving-and-transport/heavy-vehicles/operating-a-heavy-vehicle/commodity-freight>

Extractive mineral transport and the planning system

State Planning Policy (SPP) acknowledges the importance of the design and location of strategic transport routes.[120] The SPP identifies the need to protect strategic transport corridors 'from incompatible development to ensure their uninterrupted and efficient operation'. The Planning and Design Code has been proposed to introduce 'a number of overlays to replace the current Strategic Transports Routes overlay. These include Urban Transport Routes, Major Urban Transport Routes, Non-stop Corridor, Future Road Widening and Key Outback and Rural Routes Overlays.'[121]

The SPP also anticipates 'the future expansion and intensification of strategic transport infrastructure and service provision (corridors and nodes)'.[122] And with reference to the challenges presented by quarry proximity to other sensitive land uses, it accepts that 'many of our major corridors and facilities have been developed over a long period and this has highlighted where interfaces require more sensitive and ongoing management'.

The importance of heavy vehicle routes to mining was identified in the 2014 RAMP report:

> *There is a need for better recognition of the strategic importance of these [heavy vehicle] routes and land-use planning system recognition of interface issues so that sensitive uses can be better designed to cope with impacts.*[123]

And it has been reaffirmed more recently in broad terms in the state's key infrastructure strategy:

> *With the freight task anticipated to increase, a continuing trend to bigger and more productive freight vehicles and a 24/7 operating environment, it is critical that this freight connectivity is supported by the right investments and protected by the encroachment of incompatible land uses.*[124]

Whilst the challenges of developing road network infrastructure to improve economic growth are many,[125] it is clearly vital to decreasing the risk of projects and improving productivity.[126]

First and last mile

First and last mile issues are at least as important to the transport of extractive materials as strategic heavy vehicle transport routes.[127] For the purposes of this review 'first and last mile' refers to the transport route between the quarry or end user (project site) and an existing heavy vehicle route. These terminating or starting road segments are necessary to achieving the full productivity from the completed route. This section focuses on the productivity of transporting construction materials.

---

[120] See for example State Planning Commission, *Integrated Movement Systems* (n 37).
[121] State Planning Commission, 'Aligning South Australia's growth' (n 37) 124–127.
[122] See State Planning Policies 116 and 11.7 respectively in State Planning Commission, 'Aligning South Australia's growth' (n 37) 124.
[123] RAMP Report (n 41) 65.
[124] Infrastructure SA, *20-year state infrastructure strategy* (Discussion Paper, 2019) 31.
[125] See for example Department of Planning, Transport and Infrastructure, *GlobeLink* (web page, 14 May 2020) <https://dpti.sa.gov.au/infrastructure/major_projects/globelink>; Casey Briggs, 'The GlobeLink freight project has now been officially scrapped — but was it doomed anyway?' *ABC News* (web page, 28 January 2020) <https://www.abc.net.au/news/2020-01-28/globelink-transport-airport-project-was-doomed-from-the-start/11905558>
[126] Infrastructure SA, *20-Year State Infrastructure Strategy* (Report, 2020) 26. (State Infrastructure Strategy)
[127] RAMP Report (n 41) 63.

Industry stakeholders are concerned about restricted heavy vehicle access to the road network, constrained site access in the central business district, and the need for streamlined last mile access.[128] CCAA has suggested that road upgrades adjacent to quarries and end user sites should automatically include access for B-Doubles and Higher Mass Limit vehicles. The Commission has heard that, notwithstanding that some quarry operators have high-performance vehicles in their fleet, some infrastructure project site managers prohibit their access to the site, purportedly on risk/safety grounds.

The South Australian Freight Council (SAFC) summarised the productivity issues that arise in relation to heavy vehicle road network access and first and last mile:

> *when there is a mismatch between the freight vehicles allowed on a Heavy Vehicle Corridor and the short section connecting an origin/destination point into that corridor – the First or Last Mile ... a less than optimal vehicle is used for the whole task and productivity is reduced along the full corridor and the full logistics task.*[129]

Because first and last mile routes are often not approved for RAVs,[130] or only for access at a lower level than the main freight route, the vehicle used for the entire journey is generally less efficient, despite most of the transit being conducted on a route capable of using a more efficient (larger) vehicle. If a more efficient vehicle were used for the route covering most of the journey (i.e. a B-Double instead of a semi-trailer) productivity could be increased by up to 50 per cent.[131]

Box 5.1: DPTI freight model

Illustrative quarry product freight task of 1,000 tonnes
Whilst the Commission has not had the opportunity to undertake any specific transport-related modelling, DPTI shared a theoretical model of a general freight task of 1,000 tons of construction materials that demonstrated how the number of road trips can be reduced and productivity increased:

- The number of total trips could be reduced from 392 trips (19 metre semi-trailer) to 153 trips (36 .5 metre AB triple).
- The gross tonnes travelling on the road network would be reduced from 23,333 t to 21,298 t, having a positive impact on road maintenance.

DPTI suggested that the reduction in trips would also:

- reduce greenhouse gas emissions;
- positively impact on disruption to amenity in residential and other areas of sensitive land use in the vicinity of the road network used to access quarries and end-use locations; and
- incrementally reduce trip and weight outcomes for other heavy vehicle configurations.

Source: DPTI

[128] Cement Concrete and Aggregates Australia, *Cement, Concrete, Stone & Sand – Rebuilding South Australia; Protecting Lives; Creating Jobs – South Australia's Policy Priorities 2020* (Policy, 2020).
[129] South Australian Freight Council, *South Australia's Freight Transport Infrastructure – Moving Freight, The First and Last Mile* (Report, 2015) 3. (South Australian Freight Council)
[130] National Heavy Vehicle Regulator, *Restricted access vehicles – Compliance and Enforcement bulletin 1* (Bulletin, February 2020) <https://www.nhvr.gov.au/files/201706-0172-ce1-restricted-access-vehicles.pdf>
[131] South Australian Freight Council (n 129) 4.

The Commission understands the limitations on road access for RAVs. The DPTI model illustrates the potential productivity gains and other (environmental and community) benefits that could be derived by selectively using more efficient heavy vehicles more broadly. This could be approached either by changing the access authority (as discussed above) or through changes to the road network itself. The Commission is aware of examples where investment in the road network has improved productivity in the transport of construction materials.

The economic and safety benefits of high-performance vehicle use are outlined in the state's infrastructure strategy, which notes improvements to the RAV network will require some capital work to be undertaken on the network, and that:

> *risk assessment[s] to determine suitability for larger vehicles … and State Government in conjunction with the NHVR should support local councils in conducting these. There are also key pinch points within the network which, if addressed, will result in significant improvements in efficiency and productivity.*[132]

Case Study 5.1: Improving First and Last Mile Road Network Access

Clare Quarry and the Broughton Valley Road Bridge

The Broughton Valley Road Bridge is a key access point to the Clare Quarry. In February 2019 a new bridge was constructed after the old bridge was washed away. Before the new bridge was constructed the transport of construction materials to the north of the state and beyond required semi-trailers to take material from Clare Quarry to Jamestown where the loads were transferred to larger, more efficient trucks for transport to the north of the state and beyond.

The new bridge, a joint project of Clare Quarry and the Australian Government, has enabled one large truck to drive directly to the quarry to be precisely loaded and weighed using a weighbridge. The unrelated redevelopment of a nearby intersection has also improved access.

The Deputy Prime Minister commented that the new bridge would increase the efficiency of Clare Quarry's delivery of raw materials to construction projects in South Australia and the Northern Territory, and also benefit the movement of agricultural products from the region to markets.[133]

This project demonstrates that the transport productivity gains suggested by the CCAA can be achieved and could potentially be reproduced in other quarry locations through a structured and deliberate consideration of first and last mile access issues.

Source: DPTI, DEM and media as cited

The SAFC has elsewhere identified several first and last mile issues raised by its members. The SAFC's work shows that first and last mile issues for extractives can be identified and mapped for strategic analysis. The Improving Road Transport for Primary Production Project

[132] State Infrastructure Strategy (n 126) 136–137.
[133] See Flinders News, *Bridging the Safety Gap at Spalding*, 8 February 2019 (web page, 12 May 2020) <https://www.theflindersnews.com.au/story/5894621/bridging-the-safety-gap-at-spalding/>; Plains Producer, *Big Broughton Bridge Rebuild*, 13 February 2019 (web page, 12 May 2020) <https://www.plainsproducer.com.au/2019/02/13/big-broughton-bridge-rebuild/>

demonstrates the types of industry-specific transport productivity gains that can be achieved through an industry–regulator partnership approach.[134] That project built on a South Australian government 90-Day Project to 'improve productivity such as route extensions and last mile access'.[135]

Permissible working hours

The permissible hours for moving and delivering extractive minerals transported on the road network are changing. The RAMP final report identified as an emerging issue the extended hours of construction activity (night works) to minimise traffic inconvenience and meet deadlines. DPTI has confirmed that this trend remains applicable today. This creates particular challenges linked with the times when the construction material needs to be delivered (e.g. encouraging night-time truck movements).[136]

The CCAA proposes encouraging construction outside of peak transport times to enable night-time concrete pours so that concrete agitators are not spending longer on the road during peak hour congestion. It also suggested the delivery of other quarry-sourced construction material outside of congested peak traffic periods.[137] It is unclear from their submission what regulatory changes are needed to give effect to these proposals.

Draft Recommendation 5.3: First and last mile access improvements

To support productivity gains by using more efficient heavy vehicles to transport construction materials on parts of the road network where their access is not currently authorised, the Minister for Energy and Mining and the Minister for Transport establish a joint industry/government partnership in the spirit of the *Improving Road Transport for Primary Production* project to:

- identify all known first and last mile road access locations used to transport extractive minerals, including access to/from established and proposed metropolitan and major regional quarries, and fixed end-user locations such as batch plants;
- determine the extent to which the State Planning Policy and the current transport-related overlay proposals address those identified first and last mile issues; and
- the partnership approach to be inclusive and consultative including quarry industry representation, quarry operators, transport industry representation, local government representation (including key councils), community representation and other regulators with relevant mandates such as the Environmental Protection Authority.

The project is to recommend proposed road network access reforms, based on a cost/benefit analysis, for action by the State.

[134] Primary Industries and Resources South Australia (n 38).
[135] Office of the Commissioner for Public Employment, *Improving road transport for the agricultural industry* (web page, 14 May 2020) <https://publicsector.sa.gov.au/culture/90-day-projects/improving-road-transport-for-the-agriculture-industry/>
[136] RAMP Report (n 41) 22.
[137] CCAA submission (n 60) 2.

Road network investment

There are existing significant commitments and scheduled programs of work to improve South Australia's road network.[138] The importance of these projects to state economic growth is reflected in the SPP:

> *Growth in South Australian economy is likely to increase the state's freight task for the foreseeable future. As new industries are established and sectors such as defence, food production, processing and mining continue to develop, the state's freight network will need to accommodate increased demand and provide more flexible services. This will involve rural road networks, which serve as critical links in the supply chain for agricultural and other commodities. This could lead to intensification of activity on industrial lands and freight precincts and on the corridors that connect them. Protecting the freight system's ability to produce competitive outcomes for South Australian businesses and consumers is vital.*[139]

The importance of prioritising infrastructure that contributes to economic growth underpins the state's recently released infrastructure strategy.[140]

The Commission understands that the current prioritisation of road network upgrades does not consider extractive mineral transport operations, albeit the benefits to industry more broadly are considered. Where construction materials are used in state infrastructure the South Australian government is the end user and bears the cost of those products. Given the potential productivity gains achievable by allowing more efficient (larger) trucks to transport construction materials on more routes, examination of the cost efficiencies and medium- to long-term budget savings achievable by prioritising parts of the road network that are used for extractive mineral transport is warranted. Some guidance in this work is available from the location of planning overlays to protect strategic resources (discussed in Section 5.5).

Submissions from industry and advice from some regulators is that the accountability for upgrading road infrastructure to support proposed quarry operations is generally placed on proponents, particularly first and last mile routes in regional locations.[141] It is understood that these obligations are imposed by the relevant road manager, i.e. either the state (DPTI) or the relevant local council.

Draft Recommendation 5.4: Prioritising road network upgrades to optimise the extractive mineral supply chain

To increase efficiencies for transport users, and obtain cost savings to government in relation to building and maintaining state infrastructure, the Department of Planning, Transport and Infrastructure incorporate in the business cases for road network infrastructure the benefits from efficiencies in transporting extractive minerals across the state and from optimising the geographic sourcing of those resources.

---

[138] See for example 'South Australia fast tracks infrastructure projects', *Infrastructure Magazine* (web page, 30 March 2020) <https://infrastructuremagazine.com.au/2020/03/30/south-australia-fast-tracks-infrastructure-projects/>
[139] State Planning Commission, 'State Planning Policy 11: Strategic Transport Infrastructure', *State Planning Policies for South Australia* (2019) 58.
[140] State Infrastructure Strategy (n 126) 26.
[141] See for example ePlanning submission (n 45) 4.

5.2.3 Storage and transportation of explosives

The extractives industry is a consumer of explosives products and possesses expertise related to the deployment and use of those products. Controlled blasting is an essential component of quarry operations.[142] This section addresses the transport of explosive material within South Australia for use in South Australian quarries.

Proposed reforms sought by industry

The Commission has been advised that South Australian quarry operators generally in-source their blasting operations given the level of expertise required and the controls applicable to explosive transport and storage. The Australasian Explosives Industry Safety Group Inc. (AEISG) advised South Australia has been very tardy in reforming the outdated *Explosives Act 1936* (SA) and its regulations. AIESG advised that the COAG Strategic Issues Group formed in 2012 developed several explosive regulation harmonisation proposals by the end of 2016,[143] with all work health and safety ministers agreeing to those proposals in 2019.[144] South Australia is yet to give effect to these proposals. Orica also noted that 'industry has not been consulted on any proposals relating to new or updated legislation'.[145]

AEISG raised several concerns in relation to the storage and transport of explosives, which it says arise from South Australia's unilateral approach to explosives regulation in what is effectively a national supply chain. This approach creates inefficient regulation, with additional costs being passed on to business and commercial opportunities being lost.

The key issues include:

- Nationally and internationally accepted industry codes of practice and standards are not adopted in South Australia notwithstanding participation in the relevant Council of Australian Governments process.
- Opportunities to adopt efficient and safe transport options for explosives, such as Mobile Explosives Processing Units are not licensable in South Australia but are used in several other Australian jurisdictions that have significant mining and extractives sectors.
- Licensed explosives transporters are required to hold additional explosives transport licences not required in any other Australian jurisdiction, which is a consequence of South Australia not having adopted COAG-approved security principles that it was required to implement by 2004.[146]

The Commission heard from quarry operators that explosives trucks must be booked a month in advance. Moreover, if the quarry operator needs to cancel its blasting on the day of the booking, it can be a challenge to re-book that explosives service within a reasonable

[142] For general information regarding quarry blasting operations see Cement Concrete and Aggregates Australia, *Living near a quarry – blasting management* (web page, 12 May 2020) <https://www.ccaa.com.au/imis_prod/documents/Quarries/Quarry%20Factsheet%20-%20Blasting%20LR.pdf>
[143] Safe Work Australia, *Explosive Regulation reform* (web page, 20 March 2020) <https://www.safeworkaustralia.gov.au/law-and-regulation/explosive-regulation-reform>
[144] Australasian Explosives Industry Safety Group Inc (AEISG), Submission DR1 to South Australian Productivity Commission, *Extractives Supply Chain Review* (9 April 2020) 2. (AEISG submission)
[145] Orica, Submission DR8 to South Australian Productivity Commission, *Extractives Supply Chain Review* (9 April 2020) 2.
[146] AEISG submission (n 144).

timeframe. This can lead to quarry operations being stopped. AEISG's views were consistent with operator views, which also indicated that the different and additional requirements in South Australia:

> *often incur a significant time penalty, adding to cost and hindering the competitiveness of industry participants, and in extreme cases leading to loss of business … An unwillingness on the part of some industry participants to challenge the SA [regulator's] rulings leads to an unwillingness to participate in SA mining and extractive industries related ventures.*[147]

Orica indicated it is not clear to industry what performance indicators SafeWork SA adopts to measure their performance in achieving regulatory objectives. It had also observed decreasing resources over the past 18 months in the explosives compliance section, leading to licensing and regulatory delays impacting on Orica's ability to meet extractives industry customers' requests.

The views of the regulator

SafeWork SA (SWSA) advised that, arising from the COAG Strategic Issues Group, SWSA consulted industry on a draft discussion paper concluding on 25 November 2016.[148] SWSA is aware of industry concerns but to date no reforms have been made. The Commission understands that SWSA is in the process of developing a draft Bill for consultation supporting a principles-based approach to the regulation of explosives, and reflecting the four principles agreed as part of the work of the COAG Strategic Issues Group.

The Commission's view

Whilst the Commission has received only two submissions addressing explosives regulation, they offer persuasive and consistent arguments in support of the need to expedite South Australia's reform of the regulation of explosives. The Commission considers the lack of progress in this area unsatisfactory, suggesting that in this area of SWSA's operations SWSA has not adopted an evidence-based approach. It is unclear to the Commission why apparently straightforward reforms from the COAG-led 2016 consultation process have not progressed further since that time. It is not clear to industry why SWSA has taken an apparently unilateral approach to explosives regulation, and SWSA has departed from industry standards and a national approach.

Draft Recommendation 5.5: Prioritising the reform of explosives regulation in South Australia

In support of efficiency in the sourcing and deployment of explosives across the South Australian extractive minerals industry, and in furtherance of the work of the explosives regulation reform COAG Strategic Issues Group, SafeWork SA and the Treasurer:

1. complete the reform of the *Explosives Act 1936* (SA) and associated regulations within six months;
2. evaluate SafeWork SA's existing standards, practices and administrative arrangements against accepted industry codes and standards and adopt industry better or best practice in Australian jurisdictions for the regulation of explosives within 12 months; and

[147] AEISG submission (n 144) 5.
[148] SafeWork SA, *Review of South Australia's Dangerous Substances and Explosives laws – Consultation Draft Discussion Paper* (Discussion Paper, 2016) 2.

3. consult with industry representatives, quarry operators, state and national regulators and other stakeholders on these matters and publish the outcomes of those consultations published on SafeWork SA's website.

5.3 Quarry closure and post completion: achieving fit-for-purpose outcomes

The Commission has heard that the level of detail required for MOPs and PEPRs in relation to post-closure land use has increased over time, with DEM requiring that proponents provide detailed geotechnical designs and more defined end-of-use concepts:

> *Post closure arrangements are becoming excessive and at times, impractical. For example, it is extremely difficult (if at all) to predict a specific land use in 30 to 50 years. The focus should be on a range of intended/envisaged land uses, not dissimilar to Development Plan/Planning and Design Code zones. In addition, triggers for forward planning end-use e.g. 30/20/10 years to end of life could be regulated.*[149]

The regulatory authority for DEM's specific approach is unclear to the Commission at this point. As a practical matter the capacity to predict the ultimate use of land following the end of quarry operations and associated progressive and final rehabilitation varies widely across the sector. DEM expects a level of detail that cannot be accurately predicted given the long life of some quarries and this can increase the cost of operations and unnecessarily delay an approval.

Rehabilitation and closure of quarries are regulated through the Mining Act. The Mining Regulations specifically require that all mining proposals include a set of mine rehabilitation outcomes in the mining proposal and PEPR.[150] MOPs require objectives that relate to ongoing and final rehabilitation of the site, site closure, and future use of the site.[151]

The information requirements are further defined in ministerial determinations,[152] which at the lease application stage require a conceptual description of how the quarry site may look on completion. The Commission understands through consultation with DEM that this information is required so appropriate completion outcomes can be set in the lease. The requirements for PEPRs[153] go further, moving from concept to a description.

This detailed information is required in a PEPR before operations have commenced. While this may be achievable for smaller quarries where the staged plans and rehabilitation can be easily planned across a linear resource, the Commission has heard from industry that this approach is not practical for hard rock quarries, which can be a variable resource that may not be well understood at this early stage.

DEM acknowledges that, despite the requirements,[154] the description in the first PEPR could only be conceptual at this early stage for some operations. As discussed in Section 4.2.3, the experience of the assessment officer may determine whether conceptual or detailed information is required, which causes frustration for industry when the latter is requested.

[149] Boral submission (n 44) 2.
[150] Mining Regulations (n 22) reg 30(1)(d) and pt 7 reg 65(2)(b).
[151] Ibid pt 10 reg 80(3)(c).
[152] Ministerial Determination 3 (n 15).
[153] Ministerial Determination 2 (n 15).
[154] Ministerial Determination 2 (n 15) [3.7].

This mismatch of understanding between DEM and proponents is likely to be inefficient and costly to the proponents.

The operational approvals also require that operators set out plans to rehabilitate progressively through a staged approach.[155] This approach results in reduced disturbance area, and helps operators to determine the liability and costs for the final rehabilitation. It is also more cost effective to conduct rehabilitation work at the same time as quarrying to draw on operator experience and available equipment. To be able to rehabilitate progressively operators must have some vision of a final landform which will ultimately determine what land uses are available.

The Commission heard examples where the placement of material during rehabilitation reduced available land use options, which can also be limited where the focus of operations is to maximise extraction of the resource. As a low-value commodity, greater value may be realised by leaving a resource behind to allow for creation of a more valuable landform:

> *mine closure approaches that seek to maximise the conversion of in situ mineral endowment into an expansion of human, social and built capital will have the greatest chance of success.*[156]

The location of major quarries within the Adelaide metropolitan area affords opportunities to realise value during operations and post quarry completion. For companies that also own the land the economic incentives to realise the whole-of-life value is even greater. Interstate in Melbourne's south-east a Boral quarry, through a decade-long planning process, is set to be transformed into a 1700-home estate where Boral expects to earn $300 million over the life of the development.

The Commission proposes that regulatory oversight of quarry closure should not extend to detailed plans until quarrying has commenced, resource boundaries are understood and a clear timeframe for closure is established. For long-life quarries the Commission suggests the appropriate focus be on establishing staged planning mechanisms, involving proponent and regulator, to work towards a considered closure plan that maximises value for the state.

5.4 Indemnifying government against operator non-performance

DEM advises that the leading practice approach to rehabilitating land disturbed by mining activity is to progressively rehabilitate the land throughout the life of the quarry. This ensures the quarry operator considers rehabilitation as part of their planning and operational activities. For example, certain quarrying practices can impact on the ability of a tenement holder to rehabilitate land. That said, circumstances may arise where rehabilitation is not undertaken (e.g. abandoned quarries, company failures), and/or additional rehabilitation costs arise due to unanticipated changes (e.g. urban encroachment). The unanticipated matters are particularly relevant for Adelaide's metropolitan quarries given some have a very long life cycle.

To indemnify the government against any liability incurred after land is disturbed by mining operations for extractive minerals the *Mining Act 1971* (the Mining Act) prescribes the establishment of the Extractive Areas Rehabilitation Fund (EARF). The EARF aims to provide 'surety to government that an extractive mining operation can be rehabilitated where a current or former site is causing real or potential environmental harm'.[157]

---

[155] Ministerial Determination 2 (n 15) [3.3.2].
[156] B E Harvey, *The eye of the beholder – utility and beauty in mine closure* (University of Queensland, 2016) 21.
[157] Mining Act (n 4) s 63 and see also Mineral resources regulation report (n 12) 65.

Under the Mining Act the holder of a mining tenement is responsible for rehabilitating land disturbed by mining operations. The Act allows mechanisms to be established to ensure that the financial liabilities from non-rehabilitated mining activities do not become the responsibility of the people of South Australia.[158] With respect to extractive mineral mining operations, s 63 of the Act prescribes the establishment of the EARF. The Act prescribes that:

- The EARF is funded from the royalty received or recovered on extractive minerals (currently prescribed at 22 cents per tonne).[159]
- The minister can expend any portion of the EARF for specified purposes up to a prescribed threshold within a financial year (s 63(4)).
- There are three specified purposes for which the EARF can be spent:
    - rehabilitation of land that has been disturbed by extractive mineral mining operations;
    - implementation of measures that prevent or limit damage or impairment of the environment by extractive mineral mining operations; and
    - promotion of research into mining engineering methods and practices that reduce environmental damage or impairment resulting from extractive mineral mining operations.

The Mineral Resources Division of DEM administers the EARF in accordance with the *EARF Guidelines for Operation* of May 2009. Section 7 of the current EARF guidelines refers to a Project Assessment Panel (PAP) consisting of membership from CCAA, DEM and DEW to:

- assess applications for EARF funding valued over $55,000;
- annually review the guidelines and EARF contribution rates;
- undertake periodic strategic reviews of the EARF; and
- report annually on the EARF operations to the minister.

The Chief Inspector of Mines can approve projects valued less than $55,000, and projects valued over $1.1 million must be approved by the minister. Indicative timelines in the guidelines say that it takes around 20 weeks to process an application from its submission through to commencement of payment, and that applicants can lodge an appeal against a decision to an internal DEM officer.

The net balance of the EARF in 2018–2019 was $27.5 million, which includes $0.45 million for the four projects that are currently being funded. In addition to the four projects, the EARF is used to fund 5.5 of the 29 regulatory officers employed by DEM to undertake extractive mineral mining compliance, assessments of applications and EARF management activities.

The Commission has received feedback from industry stakeholders on the EARF. Their key issues are:

[158] Mineral resources regulation report (n 12) 64.
[159] Mining Regulations (n 22) reg 75A.

- There is uncertainty over the purpose and direction of the EARF – particularly following the disbandment of the advisory committee (the PAP).
- The constraints imposed by DEM on the application of the EARF appear to be at odds with the fund's original authorised purpose.
- Difficulty in obtaining funding through the EARF has led to the view that contributions to the fund should be used according to its original purposes, rather than being accrued.
- Operators have questioned the relevance of the EARF given that they are required to undertake ongoing progressive rehabilitation activities to comply with PEPRs/MOPs, thereby reducing the future potential rehabilitation liability.
- EARF funding should be provided to industry to help meet the additional costs of developing detailed plans and altering operations to meet new rehabilitation requirements.
- If industry is unable to obtain EARF funds, then royalty rates for extractives should be reduced by the EARF prescribed rate.
- The EARF guidelines are inconsistent with how the EARF is currently being used and need to be reviewed.
- The EARF model should be revised to enable operators to seek funding based on their contributions to the EARF during operations and/or at quarry closure.
- An audit is needed to determine the outstanding rehabilitation liability for those quarries approaching closure which had relied on EARF funds being available to pay for their rehabilitation costs (emphasis was changed to progressive rehabilitation after the introduction of the EARF guidelines in 2009).
- The introduction of administrative fees to process PEPRs and MOPs (from 1 January 2020) in addition to using EARF funds to pay for DEM regulatory staff is seen as duplicative and inappropriate.

  Boral notes that there appears to be ambiguity in respect of our ability to access the Extractive Areas Rehabilitation Fund (EARF). While Boral has contributed substantial amounts to the EARF, Boral has not used all of its contributions and would appreciate transparency on our future ability to draw down on the EARF contributions. Clarification of the Government's intentions of the EARF into the future would also be appreciated.[160]

5.4.1 Leading Practice Mining Acts review

The 2016 Leading Practice Mining Acts (LPMA) review included consideration of the current financial assurance models that form part of the *Mining Act 1971* (the Act): unconditional financial bonds imposed on mineral tenement owners (except for EMLs and private mines (PMs)); and payment into a pooled fund – the EARF – to cover potential rehabilitation liabilities. The review concluded each model has advantages and disadvantages:

- Financial bonds may become out of date, can be difficult to accurately estimate potential rehabilitation liability, can tie up a company's working capital to provide surety, and it is difficult to apply them to abandoned or legacy mines.

[160] Boral submission (n 44) 3.

- Pooled funds (EARF) can act as a disincentive for operators to manage risks if they expect the fund will cover their costs, which can mean responsible miners are essentially subsidising the bad practices of other miners. However, it is easier to obtain funding to rehabilitate abandoned mines.

The LPMA Review proposed that a revised, combined financial assurance model could be developed that would: cover the potential rehabilitation liability risk to the government and community; include appropriate incentives for progressive rehabilitation; and be flexible and cost effective for mining operators. The review sought comments on financial assurance models for SA on the proviso that they would not consider any proposals that impact on the current EARF funds, nor the future accumulation and exclusive use of those funds by extractive operators.[161]

The Commission notes that, although the LPMA review sought submissions on financial assurance models, the *Statutes Amendment (Mineral Resources) Act 2019* contains only a minor administrative change to the EARF. Further significant changes to the EARF may require a further amendment to the Act unless they can be accommodated in the regulations being drafted.

5.4.2 Guidance to operators

The current EARF guideline contains some language, according to submissions and consultation, that is open to misinterpretation and requires some judgement. Examples include:

- The guideline (and other DEM documentation) states that it is the responsibility of an EML holder or PM owner to rehabilitate the EML or PM but also states that 'the miner is responsible for undertaking and funding all rehabilitation on the relevant lease or private mine sites *except* where it is funded from the EARF'.
- Matters that are out of scope for EARF funding includes those matters where rehabilitation is required and it is *reasonably possible* to modify mining operations to meet current rehabilitation standards.
- The guideline only discusses funding projects – it does not include information on using the EARF to pay for other purposes (including funding of DEM regulatory officers even if they are working on the application of rehabilitation practices for extractive minerals).

Based on what the Commission has heard, the current use (and prioritisation) of EARF funds is not consistent with industry's understanding of the purposes of the EARF. It is clear from what the Commission has heard that industry expectations on the purpose of the EARF conflict with DEM's expectations. This is foreseeable given:

- Information in the current EARF guidelines focuses on what and how specific industry rehabilitation projects can be funded (not funding DEM officers).
- Given over 1,000 projects have been funded through the EARF,[162] industry would reasonably expect similar types of projects to continue to be funded into the future, despite the number of projects having significantly fallen in recent years.

[161] Department of State Development, *Leading Practice Mining Acts Review Mining Act 1971 and Regulations Discussion Paper* (December 2016) [2.4] and [2.6].
[162] Mineral resources regulation report (n 12) 65.

- The EARF advisory committee (PAP) has been disbanded, which has exacerbated a lack of communication and industry knowledge about the EARF.

The Commission has heard that DEM's policy on financial assurance to rehabilitate quarry sites has moved:

- towards the support of progressive rehabilitation strategies and requirements; and
- away from the EARF being viewed as a potential source of funds for rehabilitation at the end of the quarry life cycle.

The LPMA Review highlights that a pooled fund model such as the EARF needs to be managed and applied in a manner that will minimise the risk that the EARF:

- is a disincentive for operators who choose to defer their rehabilitation responsibilities because they expect the EARF to pay for them; and
- results in miners who do progressively rehabilitate and pay into the EARF essentially subsidising the bad practices of other miners.

The Commission considers the community has an interest in securing valuable uses of land that is no longer used for quarrying purposes. The value of that land for future purposes depends in part on the extent of rehabilitation that has occurred during, and at the end of, the quarry production process.

Operators who fail to meet their obligations to rehabilitate the land impose costs on the community when they seek to reclaim the site for another use. These situations lead to an argument for a policy tool or government intervention to indemnify the community against those costs. The issues raised above indicate that such policy tools, or intervention, must be implemented so that adverse or unintended consequences on other policy objectives including progressive rehabilitation are minimised.

Draft Recommendation 5.6: Joint review of the Extractive Areas Rehabilitation Fund

To promote transparency and a shared understanding of the purpose and application of the Extractive Areas Rehabilitation Fund (EARF), the Department for Energy and Mining (DEM) and representatives from industry and key co-regulators jointly review the EARF to:

- clarify the purpose of the EARF within the context of modern expectations around progressive rehabilitation;
- review the results of an actuarial analysis of extractive sites that was recently undertaken by DEM and consider the impact that modern progressive rehabilitation practices will have on the size of the potential future rehabilitation liability to government and community;
- increase the transparency and accountability for the funding arrangements that finance the EARF;
- determine an agreed set of criteria that can be used to expend funds from the EARF; and

- assess governance arrangements for the administration of the EARF.

5.5 Proximity to competing or alternative land uses

The proximity of established quarries to other sensitive land uses was the most commonly raised issue during consultation on the issues paper. These issues are most common in urban areas but there are examples in the regions. The proximity challenges have been articulated to the Commission as an opportunity to ensure the state's economic development requirements are reflected in and not compromised by local-level planning processes.

Proximity to other sensitive land uses impacts on quarries in two primary ways:

- Residential or other development has the potential to perpetually sterilise land, or parts of land, which contain extractive minerals. This can require those extractive-based construction materials to be sourced from further afield, adding to the cost of materials.
- Community objections to quarry operations arising from a real or perceived impact on their amenity from normal quarry processes (i.e. dust, noise, traffic) are said by industry to lead to additional scrutiny by regulators and requirements placed on the operator to provide additional information and controls, slowing or otherwise limiting quarry operations and/or incurring additional operational costs.

The regulatory system can, in the Commission's view, address these issues more efficiently without compromising government's broader objectives. Managing these negative effects is in the state's interest for two reasons:

- Premature sterilisation or closure of quarries in the greater metropolitan area (and in some regional locations) reduces the strategic cost advantage found in South Australia. Currently there is no mechanism for assessing and considering the cost to the state of premature closure, including foregone royalties and the additional costs of infrastructure and road maintenance. This missing market induces a bias in the current system towards premature closure.
- Improving the efficiency and proportionality of the regulation of quarries may avoid additional operational costs arising from inefficient controls and limitations on production that can lead to higher construction material prices. This proportionality must also balance other public interests and policy outcomes.

Notwithstanding the policy and strategy responses (see Chapter 3), the Commission has heard several examples of proximity issues creating challenges for quarry operators.

> *Resource protection is not only required from urban encroachment, quarries are often seen as easy targets for the placement of services, such as gas pipelines, power lines, rail services and roads, effectively sterilising significant portions of strategic resources, particularly when taking into account the incompatibility of blasting in close proximity to the infrastructure.*[163]

5.5.1 Attempts to address proximity issues

The RAMP Project was undertaken in 2014 to improve the interaction between mining and planning regimes in South Australia to maintain ongoing access to long-life valuable

[163] CCAA submission (n 60) 2.

extractive resources and to minimise conflicts between incompatible land uses.[164] RAMP focused on complementary changes to the mining and planning development systems needed to address complex and competing interests as urban areas expand.

RAMP recommended effective interaction between planning and mining legislation to protect strategic mineral resources and ensure potential interface issues arising from interests in land proximate to quarries can be identified.[165] One of the key actions following RAMP was identification of the state's Strategic Resource Areas (SRAs).[166] The *Identification of strategic mineral resource areas in South Australia – Greater Adelaide region and major regional centres* report (SRA Report) explicitly acknowledges the need to protect the state's strategic resources in the context of the large impact transportation costs can have on the price consumers pay for construction materials.[167]

> *To maintain supply of construction materials from resource areas at a reasonable cost to end users, it is vital that development that is potentially incompatible with existing extractives industry activities is identified through the extractive mining lease approval process. At this stage, it is important to consider any planning implications with surrounding zoning and envisaged land uses, with the view to minimise potential impacts through interface areas (buffers) around future extractive mining operations.*[168]

The definition of SRAs captures both future protection and existing proximity and interface issues by reference to:

- an area that is of key economic value to South Australia due to the quantity or quality of construction materials or mineral resources that are extracted or contained within that area; and
- the experience of urban encroachment or incompatible development interface issues or the likelihood of that in the near future.[169]

The 29 SRAs in the Greater Adelaide region (including 53 individual quarry operations), and 23 quarries near major regional centres, were determined based on criteria assessing location, production rate, operational life and quality or rarity of material.[170] Unfortunately the SRA Report was an information document that provides no practical statutory protection, and did not preclude the use and development of land in an SRA for other purposes.[171]

The CCAA has suggested:

> *the absence of identification and protection of SRAs there is potential for urban encroachment to sterilise the resource or at least increase the regulation on quarries, which increases prices for construction materials and impacts the costs of infrastructure projects and housing affordability.*[172]

---

[164] Department for Energy and Mining, *Planning and Development*, 'Resource Management and Planning (RAMP) Project' (web site, 30 April 2020) <http://www.energymining.sa.gov.au/minerals/land_access/planning_and_development#ramp>
[165] RAMP Report (n 41) 67–68.
[166] Department of State Development, *South Australia's Resource Area Management Plan: Valuing the future of our extractives sector* (Work plan, 2015).
[167] SRA Report (n 9) 8.
[168] Ibid.
[169] Ibid 10.
[170] Ibid 12–18.
[171] Ibid 5.
[172] Cement Concrete and Aggregates Australia (CCAA), Submission to Department for Energy and Mining, *Leading Practice Mining Acts Review* (22 February 2017) [2.1.2].

5.5.2 Limitations of existing strategic resource protections

The absence of any legal standing or enforceability of the SRAs has contributed to the proximity issues heard by the Commission. The challenge is to balance the value to South Australia of its most valuable construction resources with other public interests. This is a complex matter. Given that these challenges persist notwithstanding the implementation of RAMP's planning-related recommendations,[173] the Commission considers SRAs deserve legal status in the planning system. SRAs need to be considered as part of the development approval (planning) process.

The *Planning, Development and Infrastructure Act 2016* (PDI Act) became operational in outback areas (Phase 1) on 1 July 2019, with rural areas (Phase 2) and urban areas (Phase 3) intended to be operational in June and September 2020 respectively.[174] The Planning and Design Code will introduce a Resource Extraction Zone and a Resource Extraction Protection Overlay that is intended to provide for the:

> *Protection of current and future state significant resource extraction activities by ensuring development has regard to potential environmental and amenity impacts generated by the lawful operation of proximate mines and quarries.*[175]

The Commission is advised that the Planning and Design Code has a new referral to DEM for development applications proposing residential land division and sensitive land uses (such as dwellings, tourist accommodation, educational establishments, retirement villages and hospitals) within 500 metres of existing mining tenements. The Commission understands the referral gives a directive authority in the planning system in such circumstances.

The Commission is also advised that, whilst the Resource Extraction Zone is intended eventually to apply to most SRAs, in Phase 3 of the code's implementation, the Resource Extraction Protection Overlay may not be applied around urban quarries. Feedback on Phase 3 of the Planning and Design Code included:

> *…potential to expand application of overlays such as the Resource Extraction Protection Overlay, to identify and protect known economically workable deposits of minerals from incompatible development. This was also viewed as a way to better transition current development restrictions applying to areas surrounding some mining or quarry sites (i.e. by way of existing encumbrances or land management agreements), including the Gulfview Heights Quarry in the Salisbury Council area…Similarly feedback was received on the expansion of application of the Resource Extraction Protection Overlay to key quarry sites across the State was suggested to better protect these sites and minimise interface issues arising from the establishment of incompatible land uses in proximity to these sites. This was also suggested in the absence of any rezoning of sites.*[176]

The Commission is advised that complexities arising from the proximity of quarries to the greater metropolitan area would require significant investigation and consultation with all stakeholders to be able to apply the Resource Extraction Protection Overlay in those

[173] Planning policies (n 42).
[174] Department of Planning, Transport and Infrastructure, 'A phased approach to transitioning to the new planning system', *SA Planning Portal* (web page, 4 May 2020) <https://www.saplanningportal.sa.gov.au/planning_reforms/implementation>
[175] State Planning Commission, 'Phase Two (Rural Areas)', *Draft Planning and Design Code* (Policy, October 2019) 1548.
[176] Department of Planning, Transport and Infrastructure, *Phase Three of the Planning and Design Code (Urban Areas) What We Have Heard Report* (June 2020) 43.

locations. It is understood that this may be reconsidered through an amendment to the code after the initial Phase 3 transition. The Commission notes this approach significantly reduces the potential value of the statutory protections in the greater metropolitan area.

The Commission understands changes to the Planning and Design Code may be made by the Minister for Planning on advice from the State Planning Commission that arise from a consultative process under an Act other than the PDI Act.[177] The Commission is interested in whether the SRA identification process, possibly augmented by additional work from the Geological Survey of South Australia, could support an amendment to the Planning and Design Code to support implementation of Resource Extraction Protection Overlays in urban areas.

Whilst the currently proposed reforms to formalise SRAs may be a significant improvement to the status quo, industry stakeholders question whether the intended aims will be achieved. Boral argues the draft Planning and Design Code fails to recognise the importance of its six SRA quarries, and that unnecessary barriers could be introduced that impact on the operation of these quarries. Those concerns are based on Boral's views about whether those quarries are in a Resource Extraction Zone, and the fact that the Resource Extraction Protection Overlay does not apply to some.[178]

Whilst the new extractive zoning and overlays have the capacity to give legal protection to most SRAs, their partial application in the urban areas of the state, where the most substantial interface issues are present, appears likely to limit their value. The Commission sees merit in calculating the cost to the state of their exclusion.

Draft Recommendation 5.7: Implementing Resource Extraction Protection Overlays in metropolitan areas

To make progress on the operation of overlays relevant to the extractives sector, the Department of Planning, Transport and Infrastructure, in conjunction with the Department for Energy and Mining, design and implement a methodology for establishing Resource Extraction Protection Overlays, beginning with three major quarries in the Adelaide area, in preparation for the final phase of implementation of the Planning and Design Code, noting the new principles for public consultation.

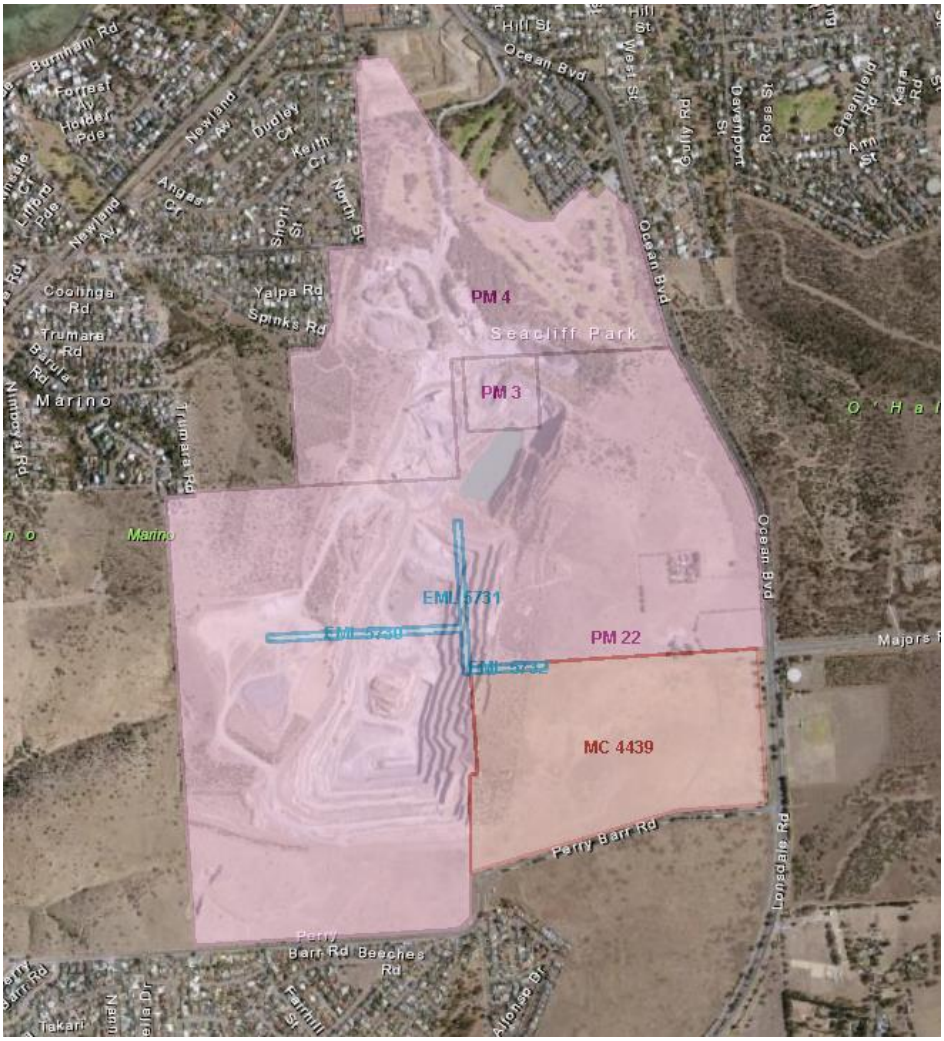
In addition, DEM work with the Geological Survey of South Australia to update the Strategic Resource Areas for extractives and adopt them in the new model.

The Commission considers the Linwood quarry illustrates these issues, especially the complexity of competing land use interests in urban areas of the state. Figure 5.1 shows a satellite image of Linwood quarry. In 2014 the RAMP report concluded there was 'very little that the planning system can do to protect this resource from the development that has occurred at the southern and northern ends, and the interface issues that now arise',[179] and recommended the quarry 'be reflected in the Planning Strategy and a 500m separation area be identified that prevents future zoning for sensitive uses without careful consideration of

[177] *Planning, Development and Infrastructure Act 2016* s 75.
[178] URPS on behalf of Boral, Submission to Department of Planning, Transport and Infrastructure, *Phase 3 Planning and Design Code* (26 February 2020). (URPS)
[179] RAMP Report (n 41) 30.

interface issues', among other things.[180] In the succeeding five years, at least 67 community-based complaints were made about the quarry, mostly about blasting and dust.[181] Linwood is also subject to EPA licensing arrangements in relation to concrete batching works, waste recycling and extractive industries.[182]

Figure 5.1: Linwood quarry



Source: SARIG

In December 2018 Boral submitted an EML application to DEM to extend the quarry operations to the east of the current pit boundary (within the existing tenement).[183] That application attracted 11 public submissions, several of which opposed the proposal or raised concerns regarding dust, noise and visual amenity. Some acknowledged the quarry's

[180] Ibid.
[181] DEM, *Complaints Incidents Report* (Report, 2020).
[182] EPA, *Licence No. 1187 Boral Resources (SA) Limited* (Licence, 1 November 2016) <https://www.publicregister.epa.sa.gov.au/document/Dk/zY/9m3UV4yCYf8OzTsveT35wQs.pdf>
[183] DEM, *Linwood Quarry Eastern Extension Project* (web page, 26 May 2020) <http://www.energymining.sa.gov.au/minerals/mining/mines_and_quarries/linwood_quarry/linwood_quarry_eastern_extension_project>

attempts to be 'a good neighbour', while other objectors had moved to the area very recently.[184]

Meanwhile local governments are working on a proposed redevelopment of a site located immediately adjacent to the northern tip (tenement Private Mine 4) of the Linwood quarry. A Development Plan Amendment would be required to accommodate the proposed redevelopment, and changes to the quarry's road access arrangements are central to the redevelopment.[185]

Under the proposed Planning and Design Code the northernmost Linwood quarry tenements would be covered by the Resource Extraction Zone, and the main pit would be covered by the Hills Face Zone.[186] Boral is proposing that quarries are placed wholly in the Resource Extraction Zone.[187] Local communities' views may conflict with this. These elements illustrate the complexity of closer proximity.

The CCAA considers that in such circumstances there is potential for the buffer land to be rezoned for residential purposes, which would sterilise that resource. To avoid this CCAA proposes legislatively barring rezoning for 25 years following the last extractive operations unless the deposit has exhausted at least 80 per cent of its reserves.[188]

[184] Ibid.
[185] City of Marion, *Seacliff Park Development Site* (web page, 26 May 2020) <https://www.makingmarion.com.au/seacliffpark>
[186] DPTI, *Planning and Design Code Consultation Map Viewer* (web page, 26 May 2020) <https://dpti.geohub.sa.gov.au/portal/apps/webappviewer/index.html?id=5fcfc772bf7d4c279ad9bb11c15bf419>.
[187] URPS (n 178) 7.
[188] CCAA submission (n 60) 1.

6. Towards a better regulatory framework

6.1 Introduction

This draft report concludes with a review of the themes, especially those related to the design of the regulatory framework.

The thrust of the Commission's approach is to streamline both the approvals process for extractives and the deployment of the outputs of extractive production in construction and other productive uses, without compromising the other government objectives and public interests. The Commission considers there is significant scope for improvement in a regulatory system led by DEM that generally appears to enjoy the confidence of the extractives sector.

Most of what the Commission proposes in this draft report can be achieved without change to regulation or legislation, although it is likely that the impending process of developing the regulations for the Mining Act will present opportunities to improve the benefit of the Commission's draft recommendations. The one area where legislative change is necessary is the long overdue changes to the *Explosives Act 1936*, where the need to modernise that Act in the light of standards adopted elsewhere in Australia has been recognised for many years. The current work by SafeWork SA can address this gap.

For the rest, the Commission's approach can be summarised in six points that constitute, in effect, a high-level principle-based action plan:

- clarify the scope of the regulated activity and the public and stakeholder interests involved;
- identify principles for reconciling conflicts, and incorporate the concept of the interests of the state;
- understand the nature of the problems, the scope of the regulatory task and the interdependence of regulatory objectives;
- identify the agencies involved and establish a mechanism for their efficient and timely interaction;
- simplify and clarify the task of each agency, including a review of tools and processes; and
- revisit the alignment of the regulatory tasks and their outcomes in the interests of the state.

The draft recommendations translate these points into specific, practical actions.

6.2 Clarify the scope of the activity and the interests involved

The first step in the design of a regulatory framework is to define the scope of the activity to which it is directed, and the stages of value adding involved. The scope of activity is generally defined in terms of industry classifications; however, these definitions may not align with the manner in which the businesses involved or their consumers think about the boundaries, scope and interaction of their activities. A value chain perspective on the activity, working back from the final users of the goods or services being produced, provides a reality check. This perspective also helps identify the various stages of value adding which

the activity involves and thereby the issues that do or might arise. Failure to check those steps may also lead to lack of consideration of a particular step in the process of transformation of raw materials, which is critical to performance from a customer point of view. For example, while the production of a finished product from raw materials is a major activity, transport of the product over the 'last mile' is critical to the customer.

In this report, the value chain framework was adopted to consider the series of steps from raw material to delivered product. This framework facilitated the identification of the various interests associated with the value-adding process. In this case, these involved not only the quarry operators and their current (and future) customers (some of whom are government agencies), but also residents (current and future) of neighbouring areas and road users. The taxpayers of the state are also relevant parties in the extractives sector, particularly in respect of their ownership of the extractive resources and the costs of constructing and maintaining public infrastructure.

Corresponding regulatory activities are then also identified in this context of the value chain, drawing on the advice of the identified interests, which also assisted the Commission to identify the 'red lights' that arise in the regulatory processes.

6.3 Identify principles for reconciling conflicts, and understand the concept of the interests of the state

The interest of the state is to maximise the value of the output from the activity, here the production of extractive materials, having regard to costs arising from the activity that are borne externally and to the ongoing consideration of the 'best' use of the land containing the extractive resource. From a state perspective, this includes not just the commercial value of the activities of the sector, but also their side effects, the value (or cost) of which is less obvious and explicit. It also includes compensation to the state for the use (extraction) of its resources through royalties and the loss to it from premature cessation of extractive activity.

The report identified instance of effects on air and water quality, on vegetation, on natural amenity, and on road damage and congestion. These various elements can be assessed, and constraints applied through the application of regulation, without which those consequences are likely to be excessive from the state's point of view. However, there is a trade-off with respect to the commercial value of the activity, since too tight a constraint with respect to a particular environmental goal may lead to an excess burden in terms of commercial consequences, including for the state. A well-designed regulatory process will consider all of those interests and, taking into account the lack of perfect information and the costs of removing uncertainty, strive for an efficient outcome.

6.4 Understand the nature of the problems and the scope of the regulatory task

As noted, the case for regulation, or action by government, more generally arises from the sorts of consequences of the value-adding activity, in this case in the extractives sector, which would not otherwise be taken into account by the managers of that activity. These effects could be benefits or costs, but in most instances just quoted are the latter. The scope of the regulatory task is to bring these consequences to bear.

In this sector, this is done by, for example (with respect to the establishment and operational phases of a project):

- establishing indicators for performance with respect to air, water and noise and approving systems for their achievement;
- identifying and planning for consequences for native vegetation;
- limiting access to infrastructure to reduce road wear and congestion;
- applying rules on the treatment of the amenity of mine sites and their closure; and
- using planning processes to account for both mining operations and urban development.

In addition, the government intervenes by the application of a royalty in order to capture some of the value of the resources for taxpayers.

These forms of intervention to respond to these issues are the standard practice in many jurisdictions. The Commission will however continue to explore alternatives, in order to establish that the best tools are now being used. For example, there are questions of whether more market-oriented instruments, rather than rules, could be used in some cases.

Information Request 6.1: Alternatives to rules-based regulation

The Commission is interested in hearing from stakeholders on how alternatives to government rules-based regulation could efficiently address externalities arising in the quarrying process. Quantifying the cost of externalities to determine the extent of intervention required is also of interest.

Examples to consider may include addressing information asymmetry in the market, self-regulation, and market-based incentives, particularly when they are connected to achieving a social licence to operate.

The identification of problems must involve public consultation, involving the various interests already identified. These consultations offer the prospect of removing uncertainty from projects and potentially extending their lives, when managed for that purpose. But without a set of principles to guide the process, there is also a risk that the public consultation process can be disruptive.

6.5 Identify the agencies involved and establish a mechanism for their interaction

An important principle in the design of any regulatory framework is that a different policy tool should be directly applied to each problem. An efficient solution will not be found through a single ‘silver bullet’ approach. Given the number of problems to be solved, and therefore the range of instruments required, there is a question of the allocation of responsibility for their management. It is valuable to have specialists apply their knowledge to particular technical problems, for example, to advise on the management of the consequences of establishing a mine for the stock of native vegetation in the vicinity. Generally, the scale of activity is not sufficient to justify an in-house team of specialists in a lead agency such as DEM. One alternative is to contract out those roles. But more likely, and as is the practice in South Australia, those specialists are found in other agencies, such as EPA, DPTI, etc. to which the relevant assessment is referred.

Essentially, staff of these bodies then interact with those in DEM in a matrix, with DEM leading on matters related to the minerals (a cross-cutting role) and other agencies specialising in particular questions. They come together in a 'project', which is the approval (or review) of a proposal for a mine. At the approval stage this project is led by DEM.

Additional issues arise when quarries are in operation, when co-regulators have their own statutory responsibilities, as well as being referral agencies as in the approvals stage. Hence the Commission suggests work to further extend delegations from co-regulators to DEM in the operations phase, within boundaries determined by the co-regulators, in order to simplify, and improve the performance of, the regulatory system.

While structure matters, ultimately the performance of the project team which operates across agencies depends on the members understanding that working on a project as a team but in a matrix, in other words a whole-of-government approach is essential. The delivery of this message is the responsibility of chief executives.

6.6 Simplify and clarify the task of each agency, including a review of tools and processes

Within this broad structure, there are matters for attention with respect to the process addressed to each problem, to the design of the tool being used and the manner of its application. This report includes recommendations with respect to the process of issuing a lease, approving a mine operational plan, ensuring quarry products conform with standards, managing the movement of explosives, determining priorities for road investments, managing the urban planning system for buffers around strategic resource projects, managing funds for rehabilitation and so on.

As noted above, the Commission will continue to work on options for tools to be used and processes to be reconsidered.

6.7 Revisit the alignment of the regulatory tasks and their capability to deliver outcomes in the interests of the state

A final step, having clarified and sought to simplify the task of each agency, is to review the alignment of the various tasks, and of 'who does what', their coverage of the set of problems identified and then the ability to bring the material together to meet the interests of the state. The leadership role of DEM means that this is the location at which those state interests are considered together.

Overall, the framework can be constantly reviewed, iteratively and 'on the job'. That is, each project offers the opportunity for learning and reflecting, while also reporting against timelines and targets, and taking into account feedback in consultation processes from the various interests. In other words, there is opportunity through DEM's practice to continually refine the framework.

The Commission welcomes comment, feedback and further improvement on its conclusions and draft recommendations in the consultation process following the release of this draft report.

Appendices

Appendix 1: Submissions in response to the Extractives Industry Supply Chain Review issues paper to support the draft report

Number	Organisation name	Submission Number
1	Australasian Explosives Industry Safety Group Incorporated	DR1
2	Barossa Quarries Pty Ltd	DR2
3	Boral	DR3
4	Cement Concrete & Aggregates Australia	DR4
5	Clay & Mineral Sales Pty Ltd	DR5
6	ePlanning SA Pty Ltd	DR6
7	Hallett Resources	DR7
8	Orica	DR8
9	PGH Bricks & Pavers	DR9
10	Ray Paxton Consulting	DR10

Appendix 2: Regulatory frameworks applicable to the extractives industry supply chain

Legislation	Administration/regulator	Applicability
Environment Protection Act 1993 (EP Act)	EPA MOU between MRD and EPA to manage regulatory overlap and interactions	Applies to 'extractives industry sector' as defined in EP Act and operations in schedule 1[189] Relevant operators are licensed under a tiered system based on risk and capability. As at November 2008, 91% of licensed premises were deemed of low risk (tier 3)[190]
Native Vegetation Act 1991	Native Vegetation Council Approval of management plan delegated to DEM	Exempts mining operations from requirement to seek approval from the Native Vegetation Council to clear native vegetation. Subject to approval of a management plan incorporating 'significant environment benefits', incorporated into the PEPR
National Parks & Wildlife Act 1972	DEW	Permits required where mining access and activities disturb protected species.
Natural Resources Management Act 2004[191]	DEW	Permits required for mining that impacts on specified watercourses Water licensing requirements for mining activities that take water in a prescribed water resource area
Aboriginal Heritage Act 1988	Department of the Premier and Cabinet – Aboriginal Affairs and Reconciliation	Protect sites of scientific and heritage significance
Work, Health and Safety Act 2012 (WHS Act)	SafeWork SA on behalf of the Treasurer Mining and Quarrying Occupational Health and Safety Committee established under part 2 of WHS Act	WHS requirements for mining are regulated through chapter 10 of the WHS Regulations. Mining operations where extraction is incidental to the activity (e.g. some road works) are excluded
Mines and Works Inspection Act 1920 (MWI Act)	DEM on behalf of Minister for Energy and Mines	MWI Act has very limited application following the Leading Practice Mining Acts Review. Most remaining relevant obligations transferred to other Acts
Development Act 1993 & Development Regulations 2008	Department for Planning, Transport and Infrastructure (DPTI) and local councils (regarding development approvals)	Larger mining projects require assessment and approval under the Act Regulations specify requirements for mining production tenements in certain areas and local government consultation. Building code rules apply to structures.
Fair Trading (Mining & Resources Industry Land Access	SA Small Business Commissioner	Prescribed as a code of conduct under the *SA Fair Trading Act 1987*

[189] *Environment Protection Act 1993*, s 7(7).
[190] SA Government, Environment Protection Authority, *EPA Industry Compliance Audit Report for the Extractive Industries* (Report, 2008) 4.
[191] The *Natural Resources Management Act 2004* has been repealed and will be replaced by the *Landscape South Australia Act 2019*.

Legislation	Administration/regulator	Applicability
Dispute Resolution Code) Regulations 2018		Provides for stakeholders to access an enforceable mandatory dispute resolution framework
Explosives Act 1936	SafeWork SA on behalf of the Treasurer	Regulates the transport and storage of explosives for blasting (licensing, storage facilities, transportation, purchase).
Heavy Vehicle Access Framework	DPTI and Australian Government	Requirements regarding road access and use for heavy vehicles transporting raw materials (including restricted access & permits).
Local Government Act 1999 (LG Act)	DPTI and local councils	Interactions between LG Act and Mining Act given roles of local government as mine operators (e.g. borrow pits) and as land and road owner/manager
Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)	Australian Government Accreditation is provided to states and territories and there is an assessment bilateral agreement with SA Government	Mining that will impact on 'matters of national environmental significance' as defined in the EPBC Act must be identified and managed through approved actions.

For more information

W: www.sapc.sa.gov.au
E: sapc@sa.gov.au
P: (08) 8226 7828

30 Wakefield Street
Adelaide SA 5000