Assessment of Queensland's Beneficial Use Approval Process

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Contents

Executive summary

1.0 Background

This assessment was commissioned by the Reform and Innovation Branch of the Department of Environment and Heritage Protection (EHP) in direct response to industry stakeholder' comments that the current Beneficial Use Approval (BUA) process is onerous, costly and complex and often requires more stringent management than if the material was managed and disposed of as a waste or a regulated waste.

Key to this assessment is whether the BUA process meets the objectives of the *Waste Reduction and Recycling Act 2011* - that is to encourage waste avoidance and recovery, reuse and recycling of waste in an effort to minimise the overall impact of waste generation and disposal. The review of the BUA framework is being undertaken within the context of the development of a new waste strategy, and secondly as part of the review of how regulated wastes are managed in Queensland.

One of the emerging themes of the new strategy is to increase the 'productivity' of wastes, through managing more wastes as resources and develop new end markets, with an emphasis on finding local solutions to local waste issues.

Queensland's BUA framework is an important mechanism designed to support efforts towards improving waste and materials resource efficiency. BUAs have significant potential to stimulate market development for wastes and drive the efficient use of resources. It is therefore important that the BUA process operates as intended and is considered by all parties to be a practical, user-friendly and efficient mechanism to encourage wider uptake and further progression towards more sustainable resource use within the State of Queensland.

The BUA framework consists of two types of approval. General BUAs are issued by EHP for use by industry, with 'anyone is able to operate under the approval, provided they are using the resource in accordance with the conditions of the approval[1].' Specific BUAs are applicant driven by a person or entity and EHP is the decision maker and may grant or refuse the application. Where a BUA is approved, specific conditions apply on the use of a particular resource between the two parties – the waste generator and the end user.

1.1 Study methodology

A key element of the research was to assess whether BUA process meets the objectives of the WRR Act. The research was commissioned in the context of the need to balance environmental protection, alongside a commitment to move towards more efficient use of resources across Queensland.

The scope of the study has included both desk based research and consultation with EHP staff and industry, undertaken over a period of four weeks in June and July 2013. The assessment included one-to-one interviews with industry (5) and EHP staff, as well as a one day workshop attended by industry representatives (17) from a broad range of sectors (13) that have had experience operating within the BUA framework.

1.2 Consultation findings

Consultation with both industry and EHP staff has raised a significant number of issues and concerns with the existing BUA process, of which a number relate to either regulatory constraints, or the procedural mechanisms for BUA application and approval process.

A number of approval holders provided examples where applications for a BUA have been granted by EHP to approve a waste as a resource, yet the conditions imposed as part of the approval place more stringent requirements on the applicant and end-user than if the waste were still to be managed as a waste.

[1] http://www.ehp.qld.gov.au/waste/beneficial-use-approvals.html

A summary of the current limitations, as identified through the consultation process, are summarised below:

Summary

- **The regulations do not provide a clear path by which a regulated waste can be de-regulated regardless of efforts to treat and reprocess; as a result onerous conditions continue to apply to the resource in its end use.**
- **Unclear which regulatory mechanism should be used by industry for managing wastes as resources i.e. BUA or Development Approval e.g. for composting**
- **A lack of clarity as to whether a BUA conditions the 'resource' or the waste management 'activity,' leading to fragmented approval conditions between operators. Limited clear and consistent internal guidance for applying approval conditions**
- **Lack of delineation between a waste and a resource in legislation and guidance. Ambiguity around when waste ceases to be waste and becomes a resource, leading to industry avoiding the BUA approval process and continuing to manage waste as waste**
- **Conditions limiting the exchange and use of a resource between more than two parties identified in a Specific BUA application, regardless of whether the resource can be used by a different end user in the same end market**
- **A higher number of Specific BUA applications submitted by industry to the department owing to a lack of confidence in General BUAs due to their 'generality'**
- **General BUAs are considered to be "too general" –owing to the lack of clarity and guidance around environmental limits for resources, markets and associated product standards on how to sufficiently create a resource from a waste and provide investment certainty.**
- **Expiry timeframes on approvals and process for updating BUAs introduced uncertainty**
- **Specific BUAs are considered to be "too specific" –owing to the number and type of conditions imposed as part of an approval**
- **Under a specific approval, the resource stops being waste only in relation to the holder of the approval and not the end user receiving the resource (so continues to be managed as waste)**
- **Conditions imposed as part of a Specific BUA approval are often more stringent for transportation and end use of a resource, than if the waste were to continue being managed as waste or regulated waste**
- **Different conditions have applied to the same resource under multiple applications (it is acknowledged that the recent centralisation of the approval process should help avoid this for future applications)**
- **Key provisions relevant to the BUA process are currently contained within the *Waste Reduction and Recycling Act 2011* and therefore any wholesale changes or amendments to BUA process have been difficult to undertake as part of a continuous review process**
- **Unclear link between how priority products identified within the WRR Act relates to a strategy for developing BUAs**
- **Whether perceived or realised, there is a view by a number of industry stakeholders consulted, that the resources at the disposal of EHP internally to support the assessment and evaluation of BUA applications, is technically and commercially limited**
- **Perception of limited commercial and technical expertise in the department to assess applications**
- **No data on who is operating under a general BUA**

1.3 Industry impacts

Qualitative feedback gained through interview and workshop consultation has revealed a number of examples where industry has experienced significant barriers in their attempts to receive approval for a resource. Examples have been identified whereby BUA applications have been either abandoned, withdrawn, or not attempted, due to what is perceived as a lack of clarity of definition between a waste and a resource, limitations in the BUA approval process, and an over regulatory approach to taken to the use of the resource in its end market.

The costs charged for processing Specific BUA applications are not the fundamental concerns of industry, rather other issues including the timescales for approval and the conditions imposed as part of application, which may be unworkable and only apparent once applications are decided and the applicant is made aware of those conditions determined. Extended timeframes in the approval process have also created uncertainty making it difficult to take investment decisions and plan for logistical and operational process.

The impacts experienced by business as a consequence to the issues identified in this review can be sizable when factoring in the indirect costs to business. One industry claimed delays to an application amendment to enable a company to send material to a local outlet, as opposed to the 34 km trip to the end user approved in the original specific BUA, resulted in an additional cost of $173,400 per year for transportation.

In addition, another interviewee highlighted a condition requiring the applicant to build a dedicated contained facility for the receipt of small volumes of sulphuric acid, despite the site being covered for receipt of much larger quantities of the same material, as part of the applicants existing permit conditions. Were this condition to have actually been imposed, the applicant would have been required to build a purpose built facility at a cost of circa $300,000.

One CSG industry interviewee estimated that it costs approximately $500,000 to prepare and submit an application, including technical consultancy, laboratory and administration fees. Similarly, feedback obtained from another organisation indicated that application submission and responding to queries from the department was responsible for 50 per cent of one staff member's total resource, with further time burden on other colleagues within the company, including Senior Management.

1.4 Conclusion

Taking into account the information gathered during the course of the study, **it is considered that the BUA process is not sufficiently robust as a mechanism to support the aims and objectives of the WRR Act**. The constraints highlighted by industry are likely to significantly limit the use of General BUAs and exert pressure upon the Specific BUA route, in terms of application submission, timescale and quantity.

Furthermore it is considered that due to these same limitations, the ability of the BUA process to accommodate emerging industries and wastes will also be limited without changes to the regulatory framework, improved guidance and clarity, and supporting mechanisms which include engagement with industry to help inform and increase the level of 'buy in' by wider stakeholders.

1.5 Recommendations

The recommendations are provided with the intention of ensuring that industry are supported in their efforts to manage wastes as resources effectively, whilst maintaining measures which enable the Department of EHP to effectively monitor and regulate the management of waste across Queensland in line with environmental legislation and the new Regulatory Strategy.

A summary of the high-level recommendations are included in Table A with more detail included in Table B.

Table A: High level recommendations

Recommendation	Comment
Develop more General BUAs to include specific guidance on waste inputs, environmental limits, standards and end markets for resources	To align with the direction of the department's *Regulatory Strategy* the development of a greater number of General BUAs that define environmental outcomes and in doing so, limit the number uptake of Specific BUAs. This will reduce overall costs for application preparation and associated charges incurred by industry, and reduce administration burden for EHP in having to assess applications. Whilst this would require up-front investment by stakeholders (regulators and industry) to address limitations of existing General BUAs (and potentially develop a further number of General BUAs to cover other priority waste streams) pay back in the form of greater uptake of BUAs and reduced regulatory and administrative burden for industry and EHP should re-compensate this investment.
Review legislation and structure of provisions across Act and Regulations applicable to BUA	The definition of regulated waste under EP Regulations 2008 is broad. For example all wastes from Commercial and Industrial and Construction Demolition sources that contain a constituent type listed in Schedule 7 are regulated wastes and therefore subject to additional waste management controls with no distinction between wastes which pose a greater risk to the environment and human health, and those which are potentially not hazardous and represent a lower risk. It is recommended that the Regulations are revisited, with a risk-based approach undertaken to declassify certain waste types, providing distinction between high, medium and lower risk wastes.
Establish Technical Industry Working Groups	Development of industry working groups for specific industries or waste streams will demonstrate a genuine commitment to consult on issues of relevance at an early stage and consider a number of the barriers and opportunities to improve resource recovery of wastes. Working groups should include regulators (including policy and relevant technical staff), representative industry (including waste generators and end users) and other relevant stakeholders, including academia and technical professionals. Immediate areas of focus should include opportunities to support and improve existing BUA guidance, address perceived technical limitations and discuss any opportunities for co-funding to develop new BUAs (e.g. environmental risk assessments and research into product standards)
Development of standard approval 'outcome focused' conditions for BUA applications (General and Specific)	In line with the *Regulatory Strategy* standard approval conditions could be developed to reduce levels of inconsistency across applications, improve clarity on internal administration of applications and increase confidence amongst industry. A suite of standard approval guidelines for specific industries, end uses and waste streams is recommended, with a commitment to review standard conditions regularly.
Improving level of guidance currently included in General BUAs	The consultation has identified industry dissatisfaction with the existing structure and content of General BUA guidance documents, considered to be 'too general' Improvements are necessary to address gaps in areas including product or resource environmental standards and limits, markets and product standards. This will require time and research and the process should to be undertaken jointly between EHP and industry to ensure that consensus is reached on key issues and that the guidance is considered by relevant parties to be fit for purpose, practical and applicable.

Review internal resources to support BUA evaluation and assessment	Under the existing mechanisms for BUA, resources which are appropriate to the task are fundamental in ensuring the BUA Team are supported technically, and industry is able to consult and receive timely feedback on any queries raised. Technical resources to attend pre-lodgement meetings, and availability of specialists in key application areas (application to land/soil science, general industry chemistry) are two examples of resourcing priorities identified as being areas which under the current evaluation and approval process would benefit from a review. It is noted however, that the new Regulatory Strategy will move towards industry being responsible for demonstrating that an activity does not cause harm to the environment sits with industry, rather than EHP.
Review of communication lines for BUA application and approval process	Reviewing and improving communication lines, particular in reference to pre-lodgement meetings, guidance to industry on timescales for application process, and standard response times for returning calls to industry are areas which are likely to improve relationships with industry.
Clarify if BUA provisions are regulating activities or specifying when a waste becomes a resource	. Greater clarity and guidance on the appropriate use of different regulatory mechanisms for the management of waste and resources will provide more certainty to industry.
Review of similar mechanisms for de-classification of waste	Quality Protocols and the End of Waste application process in the UK (similar to General BUAs and Specific BUAs in Queensland) are the mechanisms by which the England and Wales Environment Agency support and work with industry reach end of waste criteria. Quality Protocols exist for priority waste streams, including organic compost, tyres, glass and biodiesel, with clear guidelines on input materials, processing requirements, sampling and testing, environmental risk assessment and product standards. Similarly, New South Wales have up to twenty BUAs in place for priority waste streams. A desk review of end of waste criteria is recommended to identify the relevance to Queensland's priority waste streams. Where industry are able to demonstrate such limits are achieved, this should be a precursor that the resource no longer poses any risk, and therefore continual monitoring in its end use need not be undertaken. Sampling and monitoring, would therefore instead take place at the stage following the point at which a waste has been processed or transformed, to check that it meets a specification or a standard for a comparator product. This approach will also help to address the previous issue.

Table B: Recommendations and success measures

Topic	Improvement/action	Responsibility	Success measure
Regulation			
Chapter 8 of the WRR Act 2011	• Review Chapter 8 of Act \ to identify areas requiring clarity and refinement	• EHP	• Clarity on when waste management controls are no longer imposed for use of a resource and desired outcomes are clearly defined.
WRR Act – reference to 'priority products.'	• Develop a strategy and guidance on how 'priority products' referenced in WRR Act drives BUA strategy (Specific and General).	• EHP	• Clarity on priority waste steams/products generated across Queensland to inform a strategy for development of General BUAs.
EP Act 1994 - Schedule 7	• Using a risk-based approach, declassify certain waste types, and providing distinction between high, medium and lower risk wastes.	• EHP	• Revised schedule of wastes classified as regulated waste, appropriate to level of risk to human and environmental health.
EP Reg 2008 – definition of regulated waste	• Review definition of regulated waste with a view to identifying a more risk based position/classification approach.	• EHP	• Improved guidance to industry on wastes which are regulated and those which are not.
EP Reg 2008 – Section 52 and Section 53	• Revise wording to provide clarity on the point at which regulatory controls (including monitoring, sampling, reporting, transport etc.) cease.	• EHP	• BUA approval conditions set which do not impose over-burdensome regulatory control in end use of resource.
Guidance and clarity			
Website	• Update and improve website guidance on when BUAs are encouraged -specifically in relation to where BUAs are appropriate for regulated/non-regulated wastes – e.g. a 'decision tree.'	• EHP	• Improved clarity to industry where BUAs are appropriate.
Website	• Updated guidance to industry on website – specifically the relevance and interaction of legislation pertinent to BUAs.	• EHP	• Improved clarity on current and forthcoming legislation for industry.
Website	• Provide access to General BUAs on EHP website, rather than industry having to request access to documents.	• EHP	• Improved access to BUAs for industry. • Reduced administration for EHP.
Website	• Develop an on-line register to collect individuals contact details (name, job role, company, email etc) where General BUAs are downloaded, to track use of the approvals.	• EHP	• Register of companies adopting General BUAs for resource management.
BUA guidance	• Review BUA guidance to industry and develop a user friendly format which is less bureaucratic and legislative-speak in tone, and less 'text heavy'. Provide further clarity on the timeline and steps for application process, and average timescales for application process.	• EHP/Working Group	• Improved clarity to industry.
BUA application guidance	• Revise existing BUA application form – develop a suite of application forms for industry – application for resource use on land, in manufacture in construction, in energy.	• EHP	• More specific tailored questions applicable to resource use directed to applicant. • Ability to direct specific applications to appropriate individual internally for review.
BUA application guidance	• Improve application form guidance – specifically how applicants should structure an application. • Include a request for details of applications permit number.	• EHP	• Consistently structured applications submitted by industry and received by EHP, saving time. • Ability for EHP to quickly identify relevant permits held by applicants for related site operations.

Assessment report template – references to WRR Act and EP Regs.	• Review internal guidance to EHP included in guidance – specifically conditions which can be imposed as part of granting BUA, where these are appropriate and in instances where regulatory controls should be rescinded.	• EHP	• BUAs approved by EHP, which do not reflect over-regulatory burden on transportation and use of resource in end use e.g. outcome focused conditions in line with regulatory strategy.
Supplementary guidance for General BUA	• Where additional guidance is developed to support BUAs, leading to significant changes and requirements for industry, undertake consultation with industry earlier.	• EHP	• Ability for wider stakeholders to inform development of BUAs and BUA guidance ahead of wider public consultation.
Industry consultation	• Develop Technical Advisory Groups (TAGs) to include representatives from industry, regulatory bodies/EHP and academia/consultancy to ensure wider consultation on issues, such as development of further BUAs, or significant changes to existing BUAs. • Individual TAGs would be developed for specific resource streams e.g. tyres.	• EHP/Industry Working Group	• Ensuring workability, appropriateness, shared ownership and practicality of guidance and BUAs by wider industry.
BUA expiry guidance	• Provide further clarity within the guidance and approval notice to industry confirming deadlines within which they need to resubmit a request by (e.g. "renewals need to be submitted 30 days before a BUA expiry"), to ensure BUAs do not expire.	• EHP	• Guidance and standard communication documents to industry updated
Testing			
Product testing	• Review guidance provided via General and Specific BUAs (as part of standard approval conditions, see above) to ensure frequency of testing is proportional to the risk from the resources being processed. • Develop guidelines on testing for General BUAs which are proportional to quantity/volume of waste processed proportionality and are focused on the output material, rather than the input of wastes received.	• EHP	• Improved guidance to industry on testing regime to demonstrate benefit of resource which is proportional to waste quantity processed and is output focused.
General BUAs			
General BUA guidance development	• Improve and increase the specificity and level of guidance provided within General BUAs – to include guidance on input materials, processing, sampling frequency and product testing methods, end markets and product standards. • Clarify the point at which a resource ceases to be waste and becomes a resource, in order to confirm the point at which regulatory waste management controls are no longer required for resource use . • Develop improvements to BUA guidance with industry (e.g. TAGs), through early engagement, to ensure ownership, practical application and relevance to operations.	• EHP/Industry Working Group	• Improved guidance and clarity to industry on pathway to declassification of a waste. • Higher uptake and use of General BUAs by industry. • Decreased number of Specific BUA applications applied for by industry and reviewed by EHP. • Reduced costs to industry in pursuing Specific BUA route – consultancy fees, research etc.

General BUA development	• Develop a greater number of General BUAs which reflect priority waste streams and products, consistent with aims of WWR Act. • Undertake industry consultation to inform and establish priority wastes which justify the development of a General BUA. • Review number of applications for Specific BUAs to also inform which wastes justify development of a General BUA.	• EHP	• Higher number of BUAs developed and used by industry. • Decreased number of Specific BUA applications applied for by industry and reviewed by EHP for priority waste streams.
Clarification on end of waste criteria			
End of waste criteria	• Improved detail and guidance provided in General BUAs (see above) • Standard approval conditions for BUA Team, for different waste types, industries and end users, to support Specific BUAs (see above), providing guidance on when end of waste criteria (and therefore regulatory controls) is met.	• EHP	• Clarity internally and externally as to the point at which a resource is no longer a waste.
EHP resources			
Internal EHP resources	• Review and appraisal of resource capacity and availability to support BUA application evaluation – to include technical specialists in the following disciplines – application to land/soil science, construction product development and use, manufacturing/general industry, waste to energy. This could include a technical panel, made up of representatives including industry specialists in the above fields, comprising academics and consultants to ensure independence from industry.	• EHP	• Evaluation of internal technical resource capacity completed. • Improved confidence of industry across all stages of application process
Approval conditions	• Develop a standard set of approval conditions for EHP staff, for different waste types, industries and end users – including approval conditions, end of waste criteria, EHP point of contact for applicant and BUA expiry details, guidance on when applicants should update BUAs to prevent expiry.	• EHP	• Consistent and improved approval conditions applied by EHP. • Level playing field for industry, with respect to BUA application review and development of outcome focused conditions.
Application review process	• Review and develop standard operating procedures to ensure clear internal guidance on responsibilities for reviewing/evaluating BUA applicants i.e. Central rather than Regional Officers. • Communicate procedures via email or training where necessary.	• EHP	• All BUA applications directed, received and reviewed by Central BUA Team.
Pre-lodgement meeting	• Review allocation of technical resources to attend pre-lodgement meeting, to ensure technical aspects pertinent to industry applications can be addressed during the meeting.	• EHP	• Industry is able to obtain feedback on technical queries during pre-lodgement meetings and progress applications. • Clear, consistent and informed advice provided.
Expertise	• Undertake a review of department expertise that will be required to develop General BUAs and assess Specific BUAs. Consider developing a panel of technical specialists to specific industries for review of applications e.g. application to land, manufacturing, construction products.	• EHP	• Applications reviewed by individuals with background or experience in technical areas of relevance.

Data management	• Review and appraise internal Ecotrack database – with respect to the ability of EHP staff to search for live, or historic applications (DA/BUA) with clients .	• EHP	• Consistency in responses. • Applications evaluated using all available information held, including permits/DAs.
Communication	• Review options to improve access to, and communication with EHP staff (including technical and administrative staff) during application process.	• EHP	• Ability for industry to access EHP for information and updates specific to their application.

2. Introduction

2.1 Background

Sinclair Knight Merz (SKM) was commissioned by the Reform and Innovation Branch of the Department of Environment and Heritage Protection (EHP) to undertake an assessment of Queensland's Beneficial Use Approval (BUA) process.

This research has been commissioned in direct response to industry stakeholders' representation, who have raised concerns that the current BUA process is onerous and complex and often requires more stringent management and approval processes than would be required if the material was managed and disposed of as a waste.

The primary aim and objectives of the research has been to critically assess Queensland's current BUA framework, to establish if it is meeting the objectives of the *Waste Reduction and Recycling Act 2011* (WRR Act) and to provide recommendations for improvement.

This report includes the findings of the research and consultation process, together with conclusions and recommendations as to how EHP may wish to address those issues identified.

2.2 Context

The WRR Act contains measures to reduce waste generation and landfill disposal and encourage recycling. The objectives of the WRR Act include:

- To promote waste avoidance and reduction, and resource recovery and efficiency actions;
- To reduce the consumption of natural resources and minimise the disposal of waste by encouraging waste avoidance and the recovery, re-use and recycling of waste;
- To minimise the overall impact of waste generation and disposal;
- To ensure a shared responsibility between government, business and industry and the community in waste management and resource recovery;
- To support and implement national frameworks, objectives and priorities for waste management and resource recovery.

Queensland's BUA frameworks – both general and specific approvals – are an important mechanism supporting efforts towards improving waste and materials resource efficiency. General BUAs are issued by EHP for use by industry, with 'anyone able to operate the approval, provided they are using the resource in accordance with the conditions of the approval[2].' Specific BUAs are applied for by industry via an application process, requiring approval by EHP. Where a BUA is approved, specific conditions apply on the use of a particular resource between the two parties – the waste generator, and the end user. Only wastes that have a beneficial use can be approved. The criteria for deciding whether to grant a beneficial use for a resource are contained within Chapter 8 of the *Waste Reduction and Recycling Act*[3], and includes:

- Consideration of the principles of the waste management hierarchy,
- Regulatory requirements under the *Environmental Protection Act 1994*[4]
- Best practical environmental management
- The likelihood of environmental harm,
- The benefit and sustainability of the proposed resource, and
- Any alternative use for the resource.

In addition, to support the objectives the WRR Act BUAs have the potential to approve resources that will:

- Remove the regulatory controls on waste management (and therefore the burden for both the Department of EHP and industry);
- Reduce the costs associated with waste disposal;

[2] http://www.ehp.qld.gov.au/waste/beneficial-use-approvals.html

[3] Waste Reduction and Recycling Act 2011, Chapter 8, Division 2

[4] Section 4

- Reduce over-reliance on natural resources through material substitution; whilst
- Developing alternative markets and increasing the financial value of waste materials.

It is therefore critically important that the BUA process operates as intended and is considered by all parties to be a practical, user-friendly and consistently-assessed mechanism, to encourage wider uptake and further progression towards more sustainable resource use within the State of Queensland.

A key element of the research was therefore to assess whether BUA process meets the objectives of the WRR Act. The research was commissioned in the context of the need to balance environmental protection, alongside a commitment to move towards more efficient use of resources across Queensland. The recommendations are therefore provided with the intention of ensuring that industry are supported in their efforts to manage resources effectively, whilst maintaining measures which enable the Department of EHP to effectively monitor and regulate the management of waste across Queensland.

2.3 Scope of consultation

The scope of the study has included both desk based research and consultation with EHP staff and industry, undertaken over a period of four weeks in June and July 2013.

2.3.1 Desk based research

The following desk based tasks have been undertaken:

- A review of the current legislative and regulatory framework for BUAs – whether the current legislative framework supports the BUA process;
- A review of the guidance and application process for General and Specific BUAs;
- The interaction of BUAs with other legislative functions - including those relating to regulated waste management and environmentally relevant activities under the Environmental Protection Act 1994; and
- An assessment of the types of beneficial uses that have been approved (General and Specific) and the wastes that these apply to.

2.3.2 Stakeholder consultation

Stakeholder consultation undertaken as part of the research has included:

- One to one interviews with industry representatives to determine their experiences of the BUA application process and the outcome.
- Internal interviews with EHP staff – including the existing BUA Team, and wider individuals who have been historically responsible for BUA application assessment
- An industry workshop – to understand the key issues with the BUA process constraining industry, the associated impacts, and discuss potential solutions and actions to address identified issues.

2.4 Limitations of consultation

It has only been possible to undertake a small number of one to one interviews (5 in total) as part of the consultation. Whilst interviews have provided constructive and valuable feedback on a range of issues, those conducted have ultimately not captured each and every experience (positive or negative) of industry in pursuing their individual BUA applications. Stakeholder views are, however. valid perceptions and should be treated as such whether in significant quantities or not. Further industry interviews would therefore be required in order to capture a wider view of specific experiences in relation to the BUA process.

This consultation process has not undertaken a critical assessment of each of the BUA application submitted by industry or their assessment by EHP.

Through undertaking consultation it has been determined that data specific to the type and number of applications submitted for general and specific BUA is limited, therefore detailed assessment of the type and number of BUA applications received, approved, withdrawn or declined is limited.

2.5 Structure of this document

The structure of this document is as follows:

1) **Section 1:** Introduction – including background, context and scope of the consultation;
2) **Section 2:** Review of legislative and regulatory framework for BUAs;
3) **Section 3:** BUA Approvals: Baseline Assessment – including General and Specific;
4) **Section 4:** Review of BUA Guidance – including internal and external guidance provided;
5) **Section 5:** Review of Specific BUA assessments and conditions;
6) **Section 6:** Internal consultation with EHP staff - including key findings;
7) **Section 7:** Industry consultation – including industry interviews and industry workshop;
8) **Section 8:** Impacts on industry – including specific impacts arising from issues identified by industry, a summary of economic, environmental and social impacts, and industry case studies;
9) **Section 9:** Conclusions and recommendations – including action plan.

3. Overview of the policy and legislative framework for BUAs

A review of the Queensland regulatory framework for waste has been undertaken to assess whether it supports the purpose of BUAs. This exercise has considered relevant legislation to help inform whether the current legislative framework for BUAs supports the aims and objectives of the WRR Act in encouraging the proper use of resources by improving ways of reducing and dealing with waste.

3.1.1 Industry-led waste strategy

The review of the BUA framework is being undertaken within the context of the development of a new waste strategy, and as part of the review of how regulated wastes are managed in Queensland. One of the emerging themes of the waste strategy is to increase the 'productivity' of wastes, through managing more wastes as resources and develop new end markets. EHP is considering the long term role of the BUA policy framework in delivering on the objectives of the Waste Reduction and Recycling Act and the new strategy that aims to:

- Promote waste avoidance and reduction, and resource recovery and efficiency actions;
- Reduce the consumption of natural resources; and
- Minimise the disposal of waste by encouraging waste avoidance and the recovery, reuse and recycling of waste.

3.1.2 Regulated waste framework review

The review of how regulated wastes are managed in Queensland forms part of the Government's election commitment to work with waste industry and generators to develop an industry-led strategy for Queensland. The review will also help the government to deliver against its election commitment to reduce regulatory burden and costs for business. The BUA process has, in the most part, been utilised by operators wishing to deregulate wastes from needing to be managed as a 'regulated' waste. However, it is important to note that the BUA process is accessible to all wastes types, not solely regulated wastes. The current Queensland legislative framework dealing with regulated waste management under review includes:

- Definitions: including waste (s13 EP Act), regulated waste (s65 EP Regulation) and Schedule 7 (List of regulated wastes) (*Environmental Protection Regulation 2008*)
- Environmentally relevant activities (ERA): Schedule 2 *Environmental Protection Regulation 2008*
- Waste tracking: Part 4 – *Environmental Protection (Waste Management) Regulation 2000* and Schedule 1 (Trackable waste)
- Beneficial Use Approvals – Chapter 8 – *Waste Reduction and Recycling Act 2011.*

3.1.3 Regulatory strategy

The new Regulatory Strategy sets out how EHP will carry out its role as Queensland's Environment and Heritage Regulator. The strategy describes the Department's approach across the four stages of regulation—setting standards, applying standards, monitoring performance and responding to performance.

The new Strategy commits EHP to:

- Working collaboratively with industry and the community to develop standards to manage and protect the environment and heritage places
- Reducing red tape by streamlining the process of applying for approvals from EHP, and imposing approval conditions that focus on the outcomes the client must achieve
- Increasing its monitoring of clients to check that they are complying with their obligations and
- Taking strong enforcement action where necessary.

The Regulatory Strategy recognizes that:

- EHP's role is to set the limits on what an approval holder can do
- That business and industry are best-placed to work out how to stay within those limits and
- That the responsibility for managing the risk from an activity sits with the person carrying out the activity and not EHP.

3.2 Legislative review

Key legislation considered as part of this desktop review has included:

- *Waste Reduction and Recycling Act 2011;*
- *Environmental Protection Act 1994.*
- *Environmental Protection (Waste Management) Regulation 2000;*
- *Environmental Protection Regulation 2008;*

A summary of the legislative provisions discussed in this review is below. More detailed provisions can be found in Appendix A.

3.2.1 *Waste Reduction and Recycling Act 2011* – Object

The central aims of the WRR Act are to encourage the proper use of resources by improving ways of reducing and dealing with waste. It provides the detail on the delivery of the Regulations

3.2.2 Waste Reduction and Recycling Act 2011 – Chapter 8 – BUA provisions

Chapter 8 within the Act contains details of the approval process for both General and Specific BUAs and the process for amending, transferring, cancelling or suspending a BUA, as well as decision making criteria for approving a BUA. If waste can be determined as having a beneficial use then it is no longer legally regarded as a waste and is now termed a resource

Section 167 of the *WRR Act 2011* contains penalty provisions for BUAs. Failure to comply with a condition of an approval carries a maximum penalty of $183 150 for an individual and $915 750 for a corporation.

3.2.3 *Waste Reduction and Recycling Regulation (2008)* – BUA application fees

A summary of the fees for processing BUA applications is summarised in Schedule 7 of the *Waste Reduction and Recycling Regulation 2011*. The fee schedule ranges from $2,211 up to $51,419.

3.2.4 *Environmental Protection Act 1994* – Definition of waste

The definition of waste is contained in the EP Act and is described as any 'thing,' (other than a resource approved under Chapter 8 of the WRR Act) that is left over, surplus or unwanted by-product from an industrial, commercial, domestic or other activity generating the waste.

3.2.5 *Environmental Protection Regulations 2008* – Definition of regulated waste

Regulated waste is defined in the *Environmental Protection Regulation 2008* to be a waste that is generated from a commercial and industrial source and contains a type of waste mentioned in schedule 7 of the EP Reg.

3.2.6 *Environmental Protection Regulations 2008* – Conditioning activities

The EP Regulation contains provisions under Section 52 and 53 that set approval conditions for a broad range of environmental activities (including waste activities) and include conditions to be considered for environmental management decisions and monitoring conditions.

3.2.7 *Environmental Protection Regulations 2008* – Environmentally relevant activities (ERAs)

Schedule 2 of the EP Regulations include a broad range of industrial processes and activities including (but not limited to) manufacturing activities, extraction activities, fabrication activities, food production and processing and waste management activities.

4. BUA Approvals: Baseline Assessment

A baseline review has been undertaken to assess BUA applications approved by EHP, and the wastes that these apply to. It is important to note that the assessment process for BUA applications has undergone a transformation process, from:

- An initial implementation phase (characterised by the assessment function being undertaken in regional officers with a focus on site specific application of the legislation);
- A centralisation phase (with the creation of a single team to assess and mange BUA's with a focus on consistency of legislative decision making) in late 2010 and;
- A current phase (implemented mid 2011) whereby BUA assessment and management has been split between two regulation areas (being Waste and Contaminated Land Assessments and Energy Assessments) and assessment is done as one of a suite of assessments by officers in teams.

These evolutionary changes were aimed at encouraging improved quality and consistency in the BUA application review and approval process.

4.1 Number of BUAs approved in Queensland

A desk based review of the number of BUA applications received and the outcome of the assessment process has been undertaken. Data was requested from the EHP BUA Team to help provide a baseline assessment of the number of BUAs currently approved, and understand which industrial sectors are working towards beneficial use for waste.

4.2 Number of General BUAs

The BUA framework has been in place since 2001, EHP has developed three General BUAs:

- Coal Combustion Products (CCPs) used in Bound Final Products,;
- Associated Water from Coal Seam Gas, and
- Sugar Mill By-Products.

Discussion with the EHP BUA Team has determined that there is a lack of available or reliable data, which would indicate the extent to which industries are using General BUAs to declassify waste as a resource. Whilst industry is required to request General BUAs from EHP formally, no data is collected or recorded to monitor the use of the guidance.

4.3 Number of Specific BUAs

Table 1 summarises the outcome of Specific BUA applications since mid-2011, based on data received from the EHP BUA Team. Data is not exhaustive and does not reflect the outcome or status of Specific BUA applications since their introduction in 2001. The lack of complete data pre mid-2011 is due to the historic BUA application being assessment regional, with the current centralised record keeping system, 'Ecotrack, not being in place. Specific BUA applications are now reviewed and approved centrally by the Brisbane-based BUA Team.

Table 1: Status of Specific BUAs submitted by industry – Mid 2011- 2013

BUA application status	Number of BUAs
Approved	68
Refused	10
Withdrawn	23
Expired	20
Total submitted	**78**

It is understood that whilst the BUA process was being centralised, some assessments were continuing to be completed by the regional offices, therefore whilst the data provided is as accurate as possible, it may not reflect each application reviewed by EHP.

The following definitions of outcomes are provided:

- **Approved** – BUA applications are approved, subject to specific approval conditions being implemented by applicants (generator and end user). Approvals can be suspended or cancelled once they are approved.
- **Refused** – BUA applicant is rejected following assessment, where applications are considered to not meet the tests by EHP.
- **Withdrawn** - an application was withdrawn before it was decided. This typically occurs when the EHP BUA Team believes that a BUA is not the appropriate mechanism for the client and the client agrees to withdraw the application.
- **Expired** – where an approved Specific BUA goes beyond the specified expiry period, and where industry fails to renew the application. It is the responsibility of industry to renew BUA applications, EHP do not notification applicants when an approval lapses.

No records are available which relate to approvals that have been suspended or expired. Analysis of available data indicates that with respect to withdrawals, the timescale between applications being received and applications being withdrawn, varied between 1 month and 13 months. With respect to BUAs expiring, it is not clear whether the reasons for expiry is due to applicants choosing to allow BUAs to lapse, or whether this is due to industry being unaware that expiry dates have passed. Detailed analysis of the justifications for refusing BUAs has not been undertaken, however from available records, it has been determined that refusals include BUA for:

- Liquid resulting from alkaline hydrolysis of human bodies as fertiliser in cemetery gardens
- CSG Associated Water for use in power station
- CSG Associated Water for use on land (four applications in total)
- Bio solids (two applications)
- Tyres for fuel.

Table 2 summarises the number of Specific BUAs granted approval by EHP since mid-2011, all assessed by the centralised team. The table shows where there is most interest and effort by industry, with respect to efforts to improve efficient use of resources.

Table 2: Specific BUA approved – Mid 2011-2013

BUAs by waste type	Number of BUAs
Bio solids	10
Chemical waste	6
CSG / coal washing water	16
Concrete washout material	10
Tyres	11
Construction/drilling waste	4
Food and drink manufacture waste	6
Coal combustion/ash	3
Engineered by-product	2
Total BUA approved	**68**

Detailed analysis of the end uses approved or the approval conditions imposed as part of beneficial use has not been undertaken.

4.4 Summary and analysis

Whilst it is acknowledged that data is incomplete and only reflects applications from mid-2011, the following observations have been made:

- There are groupings in waste types - with EHP receiving multiple applications for the same waste type e.g. tyres, drilling waste, bio-solids;
- Although General BUAs have been developed by EHP for wastes including coal seam gas water and coal combustion products, industry are seeking to use the Specific BUA route for resources;
- Based on total applications received over this period, approximately a third of applications are withdrawn once determined that a BUA is not the most appropriate mechanism for managing a particular waste stream.

5. Review of General BUA Guidance, Process and Procedure

A desktop review of both the internal and external guidance has been undertaken to assess any areas of ambiguity, conflict and lack of clarity, which could potentially affect the application and evaluation process for both applicants and assessors.

5.1 Review of external guidance for BUA

A critical assessment of the guidance provided to industry for BUA applications has been undertaken to determine whether the materials are fit for purpose, considering:

- Any limitations with respect to information contained;
- Notable absences of information or ambiguities which have the potential to confuse, or are likely to limit uptake by industry.

Sources of guidance material reviewed include the following documents:

- Approval of a resource for a BUA guideline - EM1719
- General Approval of a resource for beneficial use – Coal Combustion Products (CCPs) used in Bound Final Products
- Decision to approve a resource for beneficial use – Associated water
- General Approval of a resource for beneficial use – Sugar Mill By-Products
- Applications forms for BUA – EM1124 (General, Part A), EM1184 (Part B), EM849 (Transfer, Part B)

5.1.1 Assessment of BUA Guidance (EM1719)

Guidance developed and issued by EHP (to industry to support applications for General and Specific BUAs) has been assessed to determine any perceived limitations or areas of ambiguity which are likely to impact on the quality of applications received. The following table summarises some of the potential limitations or weaknesses of this document.

Table 3 Assessment: Approval of a Resource for BUA Guideline

Issue	Section	Comment
When an application should be made	Section 3.1 Page 3	• Guidance states that for material labelled a 'waste', there is 'no requirement to apply for a BUA' which could be interpreted that you do not need one or it's an unsuitable process.
Style	-	• The guidance document is quite text heavy and at times, quite difficult to follow. • Redevelopment of the guidance material may be warranted, including a 'text-light' approach, using flow diagrams to illustrate approval processes and information needed to support applications, where possible.
Generality of guidance	-	• One guidance document has been developed, which includes guidance generically, regardless of whether the waste is a solid, a gas, or a liquid, or whether the intended use is application to land, for use as a fuel, or for use in manufacturing a product. • Guidance is therefore, by the nature of the document, relatively generic, potentially leading to a variety of different applications being received, in terms of structure and style. Since the majority of applications received are likely to fall within three categories, it may be of benefit to develop separate, more specific guidance documents – application to land, use as a fuel, for use in construction or manufacturing.
Timeframes	Section 4, Page 7	• No details on how long an application will take to process. • Whilst it is expected that this is dependent on a range of factors, the expectation from reviewing the guidance, is that applications will take a maximum of up to 60 days to reach approval. Industry has expressed that it would like more certainty on timeframes in order to plan accordingly. There have been instances where applicants have taken months from pre-lodgement to approval. Whilst we're not expecting definitive timescales, an indication that more complex applications may take a longer period, will enable the department to better manage industry expectations.

5.1.2 Assessment of Guidance documents for BUA – CCP, Associated Water, and Sugar Mill By-Products

A review of the guideline documents for BUA for CCPs, Associated Water, and Sugar Mill By-Products have identified the following observations, listed in Table 4.

Table 4 Assessment of Guidance documents for BUA – CCPs, Associated Water, and Sugar Mill By-Products

Issue	Topic	Observation
Number of General BUAs	General BUAs	• Only 3 General BUAs developed by EHP for industry: • This narrows the ability of industry to pursue this route. • It also increases the number of specific BUA applications received to EHP requiring assessment, increasing cost and resources to both industry and EHP.
BUA tests/Government commitment to resource efficiency/waste hierarchy	Context	• No upfront statement on the broader key tests which industry must meet and demonstrate as part of a BUA i.e. the resource is fit for purpose, occurs at a commercial activity etc.
Language and tone	General BUAs	• No mention of the Waste Reduction Recycling Act or that EHP is committed and seeking to facilitate the recovery or recycling of waste for use as a resource. • Regulatory tone in its language, which is not balanced by supporting statement to industry with respect to working towards a more sustainable outcome for waste.
Input materials	General BUA	• Limited or no guidance included, either by waste code, waste description, or waste definition, on the standard or specification of input waste materials suitable for different BUAs.
Sampling and testing	General BUA	• Limited or no guidance on the testing necessary – including the parameters, test methods, or upper limits industry should follow to validate waste materials to demonstrate risks to environmental and human health. • No guidance on sampling, or frequency of sampling included. The Sugar mill by-product BUA guidance does provide *some* guidance on sampling and testing but the CCP BUA guidance has none.
Relevant product standards	General BUA	• No guidance on relevant or approved product standards of specifications which the generator should meet in determining quality and demonstrating the resource is fit for purpose.
End of waste criteria	General BUA	• Lack of clarity in the guidance with respect to the point at which waste ceases to be waste and becomes a resource – i.e. post processing, sampling and testing – standards/specifications reached • This provides ambiguity to industry, due to the lack of clarity regarding the point at which a resource ceases to be waste and waste management controls no longer apply.
Monitoring	General BUAs	• Inconsistencies in monitoring requirements imposed. • The CSG BUA includes requirements on end user to introduce a monitoring programme for release to land, which appears over regulatory in nature. If the resource is no longer a waste, waste management controls should no longer be relevant – different application rates and receiving situations for varying end uses could be agreed for inclusion in a general CGS BUA, which if met by industry should be a precursor that the resource no longer poses any risk and ongoing monitoring need not apply. • Conversely the CCP BUA requires no monitoring requirements for the end user. This introduces confusion as to the point at which waste becomes a resource. This presents a need case for an actual Specification for CCP, which could be accompanied with evidence on market demand and environmental risk.

A lack of clarity on input materials, product standards/specifications, or end of waste criteria means that General BUAs do not provide enough guidance to 'resource producers' on how to sufficiently create a resource from a waste, or provide enough certainty to profile risk and support investment decisions. Industry therefore often sees no alternative than to pursue a Specific BUA route, since the General BUA provides no guidance on how demonstrate no environmental risk, or what standards they need to meet to give end users confidence it meets comparator resource standards or specifications.

Whilst it is important that environmental limits are set to ensure human or environmental health risks are managed, it seems appropriate to include any such limits within a General BUA. Where industry are able to demonstrate such limits are achieved, this should be a precursor that the resource no longer poses any risk, and

therefore continual monitoring in its end use need not be undertaken. Sampling and monitoring, would therefore instead take place at the stage following the point at which a waste has been processed or transformed, to check that it meets a specification or a standard for a comparator product.

5.1.3 Application forms for BUA

A review of the application forms for BUA and BUA transfer has highlighted minor issues, and it considered that the application forms generally, were relatively simple to follow. This was also reflected in feedback from industry stakeholders interviewed: The following issues were considered worthy of note:

- **Details of an applicant's ERA permit number**. Part A and Part B application forms do not request details of the applicants permit numbers anywhere in the document. Absence of this information limits the ability of assessors to easily access permit details and therefore understand what activities are already covered as part of approved conditions within existing permits.
- **Structure of information provided by applicants**. Whilst a checklist of information is included, which is considered helpful (Part B), there appears to be is a lack of guidance as to how the applicant should structure the information provided within the application submission. This has the potential for encouraging a range of inconsistent submissions to EHP in the way information and data are presented, taking additional time and effort to search for how applicants demonstrate each of the 'key tests' for BUA have been met. Application forms could be improved through the inclusion of specific sections, inviting applicants to include details of how each of the key tests for BUA have been met – e.g. *"Section 1, Include details of the resource you have produced, Section 2 Include details of procedures for ensuring quality."* Such an approach is likely to improve the consistency of applications received.

5.1.4 EHP BUA website

In reviewing guidance made available to industry with respect to BUAs, a general assessment has been made in relation to information provided on the EHP website. The BUA pages of the website include:

- Reference to the *Waste Reduction and Recycling Act,* and the Environmental Protection Act;
- A definition of Beneficial Use Approval;
- Details of the conditions under which a beneficial use can be approved;
- Types of General BUA issued;
- Examples of certain wastes which can be approved for beneficial use;
- Details relating to application process and fees;
- Links to relevant documents – application forms, and relevant legislation.

Key observations in relation to information provided on the EHP website are that:

- Access to the General BUA guidance (CCP, Associated Water, and Sugar Mill By-Products) is unavailable on the EHP website and only available on request. It is considered that this limits immediate access to industry and provides additional administrative burden on EHP to forward documents.
- EHP website is generally limited on listing and describing relevance of legislation in relation to BUAs, with scope to improve the referencing of regulations and legislation which are likely to be of relevance to industry in general, but also specific industry groups.

5.2 Internal guidance for BUA assessment

Internal guideline documents used to support EHP staff in determining the sufficiency and outcome of BUA applications have also been assessed to help determine any notable limitations likely to hinder the process. The documents reviewed are:

- EM994 – BUA Assessment Report/Approval of a resource for beneficial use, Version 1A; and
- EM995 - BUA Information checklist/Request for further information, Version 1A.

5.2.1 BUA Assessment Report

The Assessment Report is used by EHP when deciding applications for approval of a resource under Section 159 of the WRR Act. The BUA Assessment Report is structured as follows:

- Part A: General details, including:
  - Summary of the proposed use of the resource;

- Summary of environmental risks;
- Documents and mapping considered in the assessment;
- Plans and programs considered in the assessment;
- Associated history/activities of the applicant;
- Pre-lodgement meetings held;
- Advice received (assumed to be from technical colleagues).

- Part B: Considerations the approver must consider in deciding whether or not to grant approval, under Section 159 of the Act, including:
  - Waste and resource management hierarchy;
  - Waste and resource management principles;
  - Criteria with respect to the National Strategy for Ecological Sustainable Development – a variety of considerations, such as applicable environmental policies, State local plans, environmental impact studies, character of receiving environment, public interest;
  - Regulatory requirements under the *Environmental Protection Act – "any regulatory requirement under the Act";*
  - Best practice environmental management
  - Likelihood of harm
  - Benefit and sustainability
  - Alternative use
  - Matters described under a regulation.
- Part D: Recommendation – whether an application is approved, whether conditions imposed, or refused.
- Attachment 1: Including conditions which may be imposed where applications are approved, with reference to relevant legislation, including:
  - The WRR Act – including (but not limited to) conditions relating to transportation and destination, treatment, the quantity of resource which can be used, sampling, analysis, monitoring and reporting in end use.
  - The EP Regulation – including (but not limited to) conditions relating to managing risks to environment, monitoring and reporting.

5.2.2 BUA Information checklist

The purpose of the checklist is to support EHP in reviewing applications received for a new, transfer or amendment of an approval, providing evidence that a review of the information has been provided. The document is structured as follows:

- General application details – address of applicant, relevant permit number and site of beneficial use;
- Date application received and date when additional information has been requested;
- Part B: New application details, including:
  - Whether the applicant possesses the resource/has consent to use the resource;

Information about the resource – description, characteristics, destination, how the resource will be transformed, benefits, end product, relevant waste plans and product standards, assessment of potential harm (environmental risk assessment), assessment of commonly available technologies or processes relevant to proposed use.

- Part C: Transfer information;
- Part D: Amendment information;
- Part E: Recommendation and approval.

5.3 Summary and analysis

In reviewing both the external and internal guidance for BUAs, some of the key findings have been summarised:

- The Approval Guidelines issued to industry with respect to when an application should be made, in terms of whether it is for 'waste' or 'regulated waste' are quite confusing, stating that for material labelled a 'waste',

there is 'no requirement to apply for a BUA which could be interpreted that you do not need a BUA or it is an unsuitable process. The guidance is considered to be quite text heavy and regulatory in tone, possible benefitting from a 'text light' approach, with a flow diagram approach to provide clarity as to how applications are assessed and information required. Since the majority of applications received are likely to fall within three categories (application to land, use as a fuel, for use in construction or manufacturing), it may be of benefit to develop separate, more specific guidance documents related to application to land, use as a fuel, for use in construction or manufacturing. It is considered that there is also a lack of clarity provided in terms of timescales, with the guidance instead focusing on statutory response times.

- There is a notable 'generality' within the General BUA guidance documents, notably the lack of guidance and clarity identified in Table 2 relating to input materials, sampling and testing, relevant product standards, and monitoring, to guide industry to enable them to demonstrate that end of waste criteria have been met. .
- Part A and Part B BUA application forms do not request details of the applicants permit numbers in the document. Absence of this information limits the ability of assessors to easily access permit details and therefore understand what activities are already covered as part of approved conditions within existing permits.
- There is a lack of guidance as to how the applicant should structure the information provided within the application submission. This has the potential to result in a range of inconsistent submissions to EHP, in the way information and data is presented, taking additional time and effort to understand how applicants are demonstrating each of the 'key tests' for BUA have been met. Application forms could be improved through the inclusion of specific sections, inviting applicants to include details of how each of the key tests for BUA have been met.
- The EHP website is considered to be generally limited on listing and describing relevance of legislation in relation to BUAs, with scope to improve the referencing of regulations and legislation which are likely to be of relevance to industry in general, but also specific industry groups. Furthermore, industry required to contact EHP to access General BUA documents, rather than provided these on the website.
- In reviewing internal guidance used to support Specific BUA applications, it is considered that the checklist is systematic, in terms of ensuring that relevant documents which are requested as part of a submission are provided, allowing reviews to check off those requirements which are stipulated as necessary, consistent with the information stated in the relevant legislation, namely the WRR Act. The checklist also requires assessors to log the relevant permit number, which is considered good practice, in terms of referencing any relevant approvals already in place which may be relevant to a BUA application.
- The Assessment Report references the relevant requirements within the WRR Act and the Environmental Protection Regulations and the need to consider setting conditions relating to transportation, tracking, monitoring and reporting with respect to the use of the resource. Where a BUA applicant has demonstrated as part of a BUA application, that a suitable environmental risk assessment has been undertaken, waste management controls are in place, and a market exists for the resource, regulatory controls would under normal circumstances be justifiably removed. The implications of including conditions as part of any Specific BUA, which mean that use of a resource requires continual monitoring in its end use, mean that the waste generator and end user are constrained in the efforts to use the resource effectively.

6. Review of Specific BUA assessments and conditions

6.1 Background

A small number of approved BUA applications and the conditions imposed have been reviewed to assess the continuity between the approvals and their conditions. Due to the project timescales, it was not possible to undertake a wider assessment of applications. Therefore the assessment is essentially a 'snap shot' and the EHP may wish to analyse a greater number of applications to determine whether the issues identified by this assessment are common occurrences and to determine any wider issues outside of those applications reviewed.

The assessment has included a review of 8 Specific BUA assessments and the conditions imposed on the individual applicants. Included in the review were 4 Specific BUA applications for tyres and 4 Specific BUA applications for concrete wash out wastes.

Documents supplied for analysis have included:

- The BUA Assessment Report - the internal document used of deciding applications for approval of a resource under Section 159 of the WRR Act; and
- The BUA issued to the applicant – this includes confirmation to the applicant where a BUA has been granted, and the conditions imposed as part of approval.

Whilst the Assessment Report indicates the thought process behind the decisions made, many of the reports refer to supporting information directly (presumably the application), to indicate how issues have been addressed. Full comparison of the information used to determine applications has therefore not been possible with the information available.

6.2 BUA assessments and approval conditions

The following BUA approvals and conditions were reviewed as part of the assessment:

- To allow the direct reuse of used tyres for use as crash barriers in a series of road racing events;
- For approval for waste tyres for use in bank stabilisation;
- To allow for use of tyres for installation at a mooring yard for boats;
- To construct 'tree guards' from tyres at specified properties.
- For concrete washout - recovered aggregates for direct resale (to third parties);
- For concrete washout - for cement slurry;
- Waste from two specified batching plants, described as crushing and grading; and
- Crushing and grading of concrete for recovery.

Those Specific BUA applications reviewed for tyres were pre-2011, and from the descriptions, two applications related to direct reuse of tyres with no treatment (for example as fenders for boats, or use as weights on silage clamps). Only one BUA relates to any reprocessing of tyres (for use as treeguards), although the exact nature of the processing approved was not possible to determine from the available information (BUA approval letter only document available for review).

Concrete washout waste applications reviewed included requests by the applicants for approval of the separation of excess concrete from batching plants into aggregates and water to permit recovery.

A summary of issues relevant to consistency were identified and are summarised in Table 5.

Table 5 BUA approvals - Differences in approval conditions

Topic	Observation
Approval of waste sources	Differences between how the sources of tyres are defined: • The BUA for manufacturing treeguards includes details of the approved sources of the tyres and states the vehicles (including registration numbers) which may be used to move them. • A different BUA states the tyre size, nature and source. • A third BUA states states in the assessment report that the tyres are from various sources and transported by 'various volunteers'.

Quantities and storage conditions	Inconsistency in quantities and storage controls – with some related to fire others health: • One BUA examined states that tyres must be stored in accordance with the requirements of the 'Fire and Rescue Services Act 2011', although no finer details are included. The BUA also states that control measures for disease and vermin, including mosquitos must be in place. • Other BUAs specify no more than 500 tyres may be stored in one stack although this BUA no conditions relating to water pooling in the tyres (it should be noted that the tyres are stated as being stored in a woolshed). • Further BUAs state tyres must be stored so that no water may be allowed to remain within the tyres, for example by piercing the tyres to install drainage. This condition is stated as being required to prevent mosquitoes breeding or being harboured in the tyres. This BUA also includes the restriction of 500 tyres in a stack, although a minimum separation distance from other stacks or flammable materials, including grass, is specified.
Reporting conditions	Inconsistencies in references to informing the relevant authority: • Each of the BUAs require records to be kept, yet some BUAs state that these are to be made available to the Department when requested. • Only one BUA examined requires the reporting of numbers of tyres diverted from landfill to the authorising authority. • One BUA examined covered the use of tyres in bank stabilisation where the tyres are to be filled with inert material and covered, and although it references planning permission must be in place for the operation, there appears to be no direct requirement to inform the Department where the tyres have been emplaced.
Environmental Protection Evaluation	Inconsistencies in monitoring requirements: • Only one BUA examined contained a monitoring requirement for tyres once in use. • Other BUAs imposed requirements on the disposal of no longer suitable tyres, but how to determine this point is not stated.
Timescales	• There is no audit trail explaining how the approval timescale has been determined: • Some of the assessment reports reviewed do not contain a section relating to timescales. The 2011 Regulations do not appear to include any timescale restrictions, so it is unclear how a decision is made. • It is not clear whether there is a timeline for when specific approvals expire by i.e. once awarded how long specific approvals remain valid for. This has the potential for introducing uncertainty.
Terminology	• Terminology is not used consistently throughout the BUAs reviewed: • BUAs sometimes reference 'this document' with others referring to 'this approval.' • 'Other examples of differing use of terminology include 'this department, 'the authority' 'the administering authority' and the 'Chief Executive.'

6.3 Costs and charges - Specific BUA application and enforcement

A summary of the fees levied by EHP for processing BUA applications is summarised in Table 4 as included in BUA guideline - EM1719. Prescribed fees are in line with Schedule 7 of the Waste Reduction and Recycling Regulation 2011.

Table 4 Assessment: Fees levied for Specific BUA application and enforcement charges

Type of application	Fee as of 1st August 2012
Irrigation of a liquid resource to land as a soil conditioner or fertiliser—	
If the resource is a result of coal seam gas extraction	$14, 697.00
Otherwise	$5,883. 00
Application of sludge or soil resource to land as a soil conditioner or fertiliser—	
If the resource is biosolids	$2,211.00
Otherwise	$5,883.00

Using a resource for an industrial activity— if associated with the carrying out of an Environmentally Relevant Activity (being a Chapter 4 activity under the Environmental Protection Act 1994) Otherwise	 $2,945.00 $4,414.00
Using a resource for augmenting water supply Otherwise	$51,419.00 $2,211.00
Application to transfer the benefit of an approval (Waste Reduction Act, s. 168(2)(d))	$106.60
Application to amend an approval (Waste Reduction Act, s. 168(2)(d)— - For an amendment of a condition to add a new site - For any other amendment	 50% of original application fee 25% of original application fee

Following discussion with the BUA Team, it is understood that the fee structure is based on the average number of hours to review and determine an application, by application type. This flat rate system replaces a previous procedure in which applicants were billed by the hour for time incurred to process specific applications.

Industry consultation undertaken during this study identified limited issues with the existing charging mechanisms levied for processing of applications. Whilst one industry representative indicated that they would like the process to be at zero cost, no further direct complaints were made in relation to the fees levied. Another interviewee commented that the costs levied were in their experience, relatively low, transparent, and not the critical issue.

Whilst no detailed cost-benefit analysis has been undertaken, it is further considered that where a BUA is approved to an industry client (with practical approval conditions) the potential financial benefits to an industry client in managing a waste as a resource (in a de-regulated manner) are likely to outweigh the costs levied for processing applications,

It is important to note however, that the administrative costs to industry are in some cases insignificant, when compared to other costs associated with the BUA process. The costs levied for processing applications are not the fundamental concerns of industry, rather other issues including the timescales and the conditions imposed as part of application, which may be unworkable and only apparent, once applications are decided and the applicant is made aware of those conditions determined. By this point, an applicant will have invested considerable resources into the development of an application. One CSG industry interviewee estimated that each application costs approximately $500,000 to prepare and submit, including technical consultancy, laboratory and administration fees. These costs quoted do not take account of costs associated with monitoring or tracking CSG water supplied to farmers.

Where General BUAs are improved, increasing the level of uptake, this should lead to a reduced number of Specific BUA applications received and therefore requiring review, therefore reducing overall costs for application preparation and associated charges incurred by industry. Whilst this would require up-front investment by stakeholders (regulators and industry) to address limitations of existing General BUAs (and potentially develop a further number of General BUAs to cover other priority waste streams) pay back in the form of greater uptake of BUAs and reduced regulatory and administrative burden for industry and EHP should re-compensate this investment.

It is an offence under s. 167 of the Waste Reduction Act to fail to comply with a condition of an approval, carrying a maximum penalty of $183 150 for an individual and $915 750 for a corporation. No detailed analysis has been undertaken on the number of offences committed under s.167 in relation to BUAs, however it is considered that where industry has accepted and indicated an ability to work within the conditions set within a BUA, enforcement action should in general be justified.

6.4 Summary and analysis

A review of the sample approval assessments and conditions has found that there are many differences between approvals under the same type of resource category, in terms of the level of environmental protection required, whether transport is an issue, and whether storage requirements are specified. It is considered that some of this inconsistency is likely to be due to changes in guidelines or interpretation by staff. EHP has further since confirmed that some of these inconsistencies (namely the approval conditions for storage of resources) have been addressed through a centralisation approval process for BUA applications.

It is further considered that there are a number of applications, which due to their commonalities (e.g. concrete washout), would warrant the use of standardisation or 'off the shelf' templates, as their uses would encourage more consistency in the conditions of an approval.

A number of applications were granted with approval conditions related timescales, which mostly lapse after five years, with the exception of one, for water use, which had approval for ten year. It is unclear how these timescales are justified to ensure consistently applied timescales across approvals, this may be because there is no indication of timescales for BUAs with in the WRR Act.

With respect to conditions imposed for monitoring and reporting, it is not clear:

- how this should be undertaken;
- to who information should be provided; and
- what frequency is required for either monitoring or reporting.

Finally the assessments differ in terms of points of contact, sometimes referencing to the Chief Executive, sometimes the Department, whilst other times the Regional Compliance Officer is referenced. It is considered that the latter is a historical reference, since approvals are no longer undertaken regionally.

7. Internal Consultation – EHP staff

7.1 Background to consultation

Consultation with EHP staff was undertaken via a series of meetings and interviews in June 2013. The consultation included discussions with the current BUA Team, but also individuals within EHP who either support the BUA assessment process, or who have historically been responsible for undertaking application assessments. Questions were largely open ended and included:

- How is consistency ensured in the decision making processes across application assessments?
- What training, guidance protocols are provided to support assessments?
- Are there any ambiguities that make decision making and condition setting difficult? and
- What difficulties have been experienced and how do they impact on decision making?

Proformas were developed to support data gathering, which are included in Appendix 1. Information and feedback obtained from this process was essentially qualitative.

7.2 Consultation findings

Table 6 includes a summary of the key issues, considered to be limiting the effectiveness of the BUA approval process and the ability of individuals to work effectively, identified by those consulted.

Table 6: Feedback from EHP staff in relation to BUA application assessment

Topic	Observation
Conflict between EP Act and WRR Act	• Section 13 of EP Act provides the definition of the conditions upon which a material remains a waste, and those where it can be considered a resource. • Perception amongst BUA Team that in some instances granting approval for a BUA is approving environmental harm. It is not currently clear how the EP Act (environmental harm) considerations interact with the WRR Act (resource recovery) and this subsequently influences how operational procedures are developed and engenders uncertainty by industry • There appears to be a culture of regulatory practice and environmental enforcement performed by the Department, within which approving use of a waste and removing regulatory control engenders uncertainty, with limited experience in promoting resource use under the WRR Act.
Inappropriate conditions imposed in BUA	• The BUA Team acknowledge that many activities relevant to waste are already covered under an applicant's Development Approval (DA). • The BUA Team will try to separate out approval conditions imposed as part of a BUA to ensure there is no duplication with an applicant's DA. • The BUA Team will try to ensure that conditions are outcome focused, and relevant to the product, rather than regulating the activity. • There was however, acknowledgement that BUAs were often assessed in isolation of an applicant's DA. However, there have been historical examples of where EHP staff have wrongly applied conditions as part of a BUA (conditions already contained in a DA), i.e. regulating the activity rather than removing regulator barriers to end use. • It is acknowledged that there is the potential for confusion, whether the activity or the resource should be the focus of the conditions.
Lack of joined up approach to reviewing approvals (BUA/DA)	• There has been a precedent whereby EHP approved the use of the same source of organic waste via two separate applications – one application was a BUA, one application was a DA, from two competitors. • The two applications were reviewed by different individuals within EHP via two separate areas of the Department. Details only emerged after the event, following complaint from industry, leading to internal investigation.
Internal guidelines for BUA approval	• An internal register is used by the BUA Team to record BUA applications, which includes all historical approvals granted to different applicants. • An internal checklist to help EHP staff assess BUA applications was historically been provided, however it is understood that this has been withdrawn.

Inconsistent advice to industry applicants	• There has been a legacy whereby BUA applications have been assessed by different Officers in different regions, not necessarily by individuals with specialist or industry knowledge. • Only in the last 2/3 years have applications been reviewed and assessed centrally. • There have been examples whereby regional EHP Officers have reviewed BUA applications, taking the same approach and setting the same conditions as would have been relevant for a Development Approval[5], rather than a BUA, leading to over-onerous conditions and constraints being imposed on industry and end users, with respect to monitoring, transport and use of the resource. • A high turnover of staffing levels has also impacted on the level of consistency applied to BUA approval conditions.
Understanding on appropriateness of BUA route for a waste	• There are cases where, due to differing internal views, and the different routes for managing wastes. it is not clear whether a BUA is the most appropriate regulatory route for a waste, or if other regulatory mechanisms, such as environmentally relevant activities[6] (ERAs) are more appropriate • The BUA team receive a number of external queries as to whether a BUA is needed. There is a perception that there is a lack of understanding externally as to which wastes are regulated and which are not, and when a BUA is appropriate.
High level of resources spent reviewing Specific BUA applications	• Currently the BUA Team spends most of their time reviewing and assessing specific BUA applications, seeking clarifications and reviewing documents. • This takes time and resources away from other areas such as enforcement activities and contaminated land assessments.
Ambiguity on whether end of waste tests have been met	• There is often ambiguity whether applicants have demonstrated that an end of waste point has been reached. • This often leads to confusion as to what conditions should be imposed on the applicant.
Narrow interpretation of aims and objectives of BUA	• Difficulties in being able to switch between regulating to ensure prevention of environmental harm and approving a resource for beneficial use. • A perception that BUA assessments are undertaken by individuals who come from an environmental protection background, with a narrow interpretation of the aims and objectives of BUA, with respect to encouraging activities which promote the treatment of waste in accordance with the waste hierarchy. • One day individuals will be dealing with environmental harm issues, the next the same individuals will be reviewing a BUA.
BUAs expiring	• There is no legal obligation for EHP to inform industry that a BUA is due to expire which means industry may not be operating under the conditions of the BUA if they wish to continue doing so. • There are instances where BUAs have expired, due to industry failing to submit a request to update a BUA.
Proposals to reduce EHP technical staff	• There is an internal trend towards reducing the level of technical resources within the EHP team, which will include resources available to the BUA team to assess Specific BUA applications.
Competing timeframes for statutory response times	BUA application approval occurs in a space of competing timeframes: • In addition to BUA applications (40 day statutory response time) the BUA Team are also responsible for reviewing and responding to ERA applications (10 day statutory response time). • Permit applications are often prioritised, due to the need to meet shorter deadlines, meaning BUA applications are often dealt with later, due to pressure to address the permit applications as a priority.

7.3 Summary of findings

The discussion with EHP staff, both existing BUA Team staff, and wider colleagues, has indicated some inherent, fundamental barriers which are limiting the ability of EHP to operate an effective system of BUA evaluation and approval process.

Whilst it is indicated that some of these issues are historical (i.e. regional officers approving BUA applications, rather than the Central BUA Team), a significant number of the issues raised during discussion are current, and

[5] Under the Sustainable Planning Regulation 2009, a number of proposed activities or development require pre-approval, via an application to EHP http://www.ehp.qld.gov.au/management/planning-guidelines/legislation/integrated-planning-act/index.html

[6] Various activities, including industrial operations and processes are regulated under ERAs by EHP under the EP Regulations

continue to hinder the application review process. This has implications for industry in terms of inconsistency, ambiguity and potential delays to application process and approval.

The issues raised by individuals consulted also have consequences for internal staff. Limited guidance, difficulties in interpreting legislative requirements and ability to determine appropriate approval conditions are likely to put strain on individuals responsible for dealing with industry clients, where there is pressure to reach a qualified outcome.

8. Industry consultation

Consultation with industry stakeholders has been undertaken to understand both collective and individual experiences of the BUA process. Critically, the industry consultation has sought to understand the key issues and the resulting impacts of perceived inherent limitations of the existing mechanism for approving wastes as resource. The findings of the consultation process has been used to inform whether the existing mechanisms and processes for BUA are fit for purpose and support the aims and objectives of the WRR Act, in promoting waste avoidance and reduction and resource recovery and efficiency actions.

8.1 Industry Interviews

Five one to one interviews were undertaken in June 2013. Interviewees were identified in discussion with EHP, and through consultation with trade and industry associations, such as the Australian Council of Recycling and members of the Waste and Recycling Industry Association of Queensland. Data and information was sought on a range of issues specific to the interviewees BUA application. More specifically, interviews sought to obtain details summarised in Table 7.

Table 7: Structure of industry interviews

Topic	Detail
Company background	The industry in which the interviewee operates.
Background to BUA applications	Associated waste streams relevant to each application, whether a General or a Specific BUA route was pursued, and the number of BUAs held, and any proposals for further applications.
Feedback on guidance provided	Whether the guidance issued by EHP was considered suitable, with respect to when and how an application should be made, timescales for approval, information which should be included as part of an application.
Cost information	Whether guidance provided by EHP for costs associated with processing applications was considered to be transparent and the costs incurred in submitting an application.
Communications	Including the experience of attending a pre-lodgement meeting, the interface between EHP whilst the application was being processed and the feedback received following the outcome of the application evaluation.
Conditions of approval	Specifically, what these were, whether information provided was clear and understandable, whether they were explained and were justified and whether applicants were able to comply with conditions.
Cost and benefits	Whether the BUA route has enabled the interviewee to manage resources in a more positive and resource efficient manner, what the economic, social or environmental impacts of the BUA route has provided.

The consultation process was qualitative in nature, although with respect to impact, industry representatives were asked to quantify economic, social and environmental impacts, where possible. A copy of the proforma developed and used to conduct the industry interviews is included in Appendix 3. Fully copies of the interview notes compiled through the interview process are also contained in Appendix 4.

8.2 Industry workshop

An industry workshop was held on 19th June, at EHP offices, Brisbane. The workshop was attended by 17 individuals from 13 different organisations, including waste generators, waste management companies, recycled product manufacturers and industry and trade organisations. EHP staff were also represented to oversee the process. A full list of delegates is included in Appendix 5.

The industry workshop structure followed a series of exercises, conducted either in one group, or as small break-out groups, with the intention of exploring the key perceived issues inhibiting industry, the resulting impacts of the issues, along with potential solutions to address each of the issues discussed. In addition to the workshop, the session served to provide industry with further background to the consultation, with an update provided by EHP on forthcoming changes to the regulatory framework for waste in Queensland. The structure of the industry workshop is summarised in Table 6. Full details of the workshop agenda and run sheet are included in Appendix 8.

Table 8 Structure of industry workshop consultation

Topic	Detail	Output
Exercise #1: Understanding the Issues	• Group exercise to define current issues relating to the BUA policy and process. • Industry invited to provide examples of where the BUA process has had an impact on their business.	• Consensus on the current issues industry has been experiencing relating to the BUA policy framework • How this is currently limiting the aims and objectives of Queensland Waste Policy • Some quantification of the key impacts on industry stemming from the current BUA framework
Exercise #2: Understanding the Impacts	• Discussion to prioritise key issues identified specific to the BUA policy and process. • How the process is limiting industry in helping to achieve the aims and objectives of Queensland Waste Policy.	• Prioritisation of key issues to be addressed as part of the consultation.
Exercise #3: Options to Address Issues	• Group exercise to consider options for addressing the issues identified in Exercise #1 and #2.	• Actions to try and resolve the issues identified which need to be addressed in as part of the BUA consultation.
Exercise #4: Implementing Change	• Discussion to define actions and next steps.	• Immediate actions which can be undertaken to improve the BUA process. • Short, medium and longer term actions which may require further consideration.

The findings of both the industry interviews and workshop have been collated to present the range of issues with the BUA process considered to be inhibiting industry in adopting the route of BUAs in Queensland.

8.3 Key barriers identified by industry

Data and information gathered from the industry consultation has been collated and analysed and is presented in this section. Following the interview and workshop consultation, the following key themes were identified as being the main inhibitors limiting the BUA process.

1. Waste definition – once waste, always waste (conditions and over-regulation)
2. Guidance and clarity – e.g. relating to amendment and renewal of BUAs
3. Inconsistency
4. Burden of testing regime
5. Responsibilities for setting standards, criteria and environmental limits
6. EHP resources to approve BUAs
7. Delineation between waste vs. resource
8. Cost/time for applications
9. Overlap of legislation – between ERAs and BUAs.
10. Role of BUA – Specific BUAs are “too specific” vs. General BUAs are “too general.”
11. Disincentives of using the BUA route
12. Responsibilities on industry to prove quality and process.

It is recognised from discussions with industry during both interview and workshop discussions, that a number of these issues are closely linked. The following sections discuss each of these inhibitors in more detail.

8.3.1 Definition of waste

The existing definition of waste, specifically the definition of regulated wastes in Chapter 5, Section 65 of the Environmental Protection Regulations (2008) was considered to be a key limiting factor inhibiting wider application of the BUA process. Under the Regulations, regulated waste is defined as *“commercial or industrial waste, whether or not it has been immobilised or treated*[7]*”*, implying that a waste remains a waste, regardless of efforts to treat, process or manage the waste. The regulations therefore do not provide a clear path by which regulated wastes can become ‘de-regulated’ leading to over-onerous conditions imposed as part of a BUA application approval on the waste generator and the end user, with respect to handling, transporting and using the resource. The implications of this interpretation of the legislation are such, that as part of approving a

[7] Environmental Protection Regulations (2008) Chapter 5, Part 1: Regulated Waste

resource for beneficial use, EHP staff considers the need to impose regulatory controls which continue to manage and monitor the use of the resource in its end use.

The Regulated waste list (Schedule 7 EP Reg 2008) also includes a broad listing of waste streams, all of which under the legislation are classified as regulated wastes, including a number of waste streams which are considered by industry to pose lower environmental risk (e.g. tyres, cooking oil and food processing waste) where managed, compared with higher risk waste streams (e.g. cyanides, asbestos). The blanket approach to categorising a high number of wastes generated by industry as 'regulated wastes' means that efforts to declassifying waste via a BUA route are granted with over regulatory approval conditions.

This fundamental issue was identified during both interview and workshop discussions. Experiences were identified whereby industry had abandoned BUA applications, due to what has been considered to be overburdening conditions and 'green tape' imposed as part of approval conditions granted. EHP is aware of this particular issue, through discussions with industry groups concerning specific BUA applications. As part of the development of a new waste strategy for Queensland, EHP is currently reviewing how regulated wastes are managed in Queensland. This work program will include reviewing the definition of regulated waste and related classifications.

8.3.2 Guidance received and communication

Feedback has been provided regarding guidance and communication provided by EHP in relation to individual applications either being considered or progressed by industry.

Pre-lodgement meetings

Feedback obtained from industry in relation to guidance and communication from EHP relates directly to pre-lodgement meetings for BUA applications. Three of the five interviewees identified negative experiences attributed to pre-lodgement meetings. These are summarised in Table 9.

Table 9 Pre-lodgement meetings - summary of issues

Issue	Description
No indication provided at pre-lodgement stage that BUA was not worth pursuing	• The application in question related to a proposal to send the designated waste outside of Queensland. Under statutory controls, BUAs are only permitted where the stated end use is within Queensland, with EHP unable to approve BUAs outside of this jurisdiction. • The applicant was only advised of this outcome after pursuing EHP for feedback post-pre-lodgement meeting and was advised after a period of six weeks that the application would be rejected.
Different interpretation of discussions	• Feedback was received reflecting a view that whilst pre-lodgement meetings were initially positive, what was covered as part of meeting discussions did not reflect the subsequent actions or response from EHP. • Correspondence received from EHP was identified as being contradictory to discussions, with respect to whether a BUA application would be supported, and whether a BUA was the appropriate route for managing a particular waste.
Lack of technical presence at meetings	• A view was expressed that pre-lodgement meetings were not helpful, due to the absence technical representatives, despite the applicant requesting their presence. • The absence of technical individuals meant that the applicant was unable to discuss specific issues concerning their BUA application.

General dialogue with EHP

Further to pre-lodgement meetings, general feedback has been obtained from industry stakeholders concerning guidance and communication received from EHP during the application process and is summarised in Table 10.

Table 10: Guidance and communication - summary of issues

Issue	Description
Lack of clarity on approval conditions	• One industry stakeholder indicated they felt that EHP were not willing to provide justification as to how environmental limits for waste set as part of approval conditions has been reached. This lack of clarity meant that the applicant was unable to challenge the basis of these approval conditions with EHP. The particular example related to a lack of clarity as to how limits for soil chemical and metal composition had been set as part of a BUA approval[8].
Guidance on BUA process	• Industry cited examples of where they had submitted a request to update a BUA due to expire within 5 days, and were informed by EHP that "5 days was not a sufficient enough time ahead of an expiry date and the BUA was subsequently cancelled[9]."
Unwillingness to communicate	• There was a perception that EHP were unwilling to respond via phone, or return calls, preferring to communicate via email or by letter. This meant that individuals were unable to discuss or clarify particular issues raised in correspondence[10].
No opportunity for discussion of technical issues	• Feedback included a limited opportunity for 1-2-1 discussions with EHP technical staff, with an inability to speak to individuals beyond the administrative staff. The impact of this has included a lack of ability to discuss technical aspects of an application directly with EHP[11].
No consultation on draft conditions imposed	• One industry stakeholder identified a scenario where they were only informed of the conditions being imposed as part of a BUA approval after twelve months, with limited opportunity for dialogue during this period. In this example, the conditions imposed as part of approval were considered to be *'over and above conditions already included as part of the site permit'*. The conditions were unworkable, with no communication at an earlier stage or opportunity to discussion. "*At no point did we have an opportunity to shoot down the disproportionate conditions, until the final approval notice 12 months down the line*"[12].
Statutory timescales indicated in guidance not reflecting the timescale for application	• In one experience identified, the timescales given for reaching an outcome took 12 – 18 months (including time taken to seek an amendment to conditions imposed). This '*introduced a mismatch of expectations*', in which the applicant was anticipating a 30 day turnaround, leading to operational challenges for waste logistics on site[13].
Difficulty in contacting EHP	• One industry stakeholder interviewed commented that they had received no contact concerning their application for six weeks following pre-lodgement meeting, despite "*constant pestering*".

8.3.3 Inconsistency

Inconsistency was raised as a particular concern in relation to the type of conditions imposed as part of application approval. Historically, applications have been approved by regional officers, rather than being evaluated and approved centrally by EHP, leading to inconsistent interpretation of applications and conditions being imposed. Industry also raised experiences of high staff turnover within EHP, meaning Officers progressing applications had little background knowledge or were starting from fresh, in terms of their understanding of the businesses operations and objectives to manage waste.

Examples of inconsistency were cited with respect to the conditions imposed as part of a BUA approval, with conditions imposed often being over and above those conditions set as part of either Development Approval conditions. Section 9.1.1 cites the experience of one industry client, who received conditions in excess of their existing conditions. This particular issue has been confirmed during discussions with EHP, citing historical examples whereby applications which had been evaluated had been approved with conditions consistent granting of a Development Approval, rather than a BUA. This inconsistent interpretation of the framework for BUAs has led to over-onerous conditions and constraints being imposed on industry and end users with respect to monitoring, transport and use of the resource. EHP confirmed that a high turnover of staff had contributed to inconsistent evaluation of BUA applications.

Discussions also identified examples of inconsistency in terms of approvals for use of wastes via different regulatory mechanisms.

[8] Example referenced relates to a BUA application submitted April 2012

[9] Example referenced relates to a BUA application submitted April 2012

[10] Example referenced relates to a BUA application submitted April 2012

[11] Cited in interview with a CSG industry representative and referenced as a current issue

[12] Example referenced relates to a BUA application submitted late 2009, issued in February 2011

[13] Example referenced relates to a BUA application submitted late 2009, issued in February 2011

8.3.4 Burden of testing regime

Feedback from industry indicated a view that the level of testing required, with respect to Specific BUA application conditions was over-burdensome. Examples cited included a compost facility which was required to test each and every load of organic material received at their facility, as part of approval conditions imposed.

In other examples, a representative from the ash product industry commented that they often submit a Specific BUA, with a lack of confidence as to whether the level of testing demonstrated is sufficient, often leading to more product tests and environmental risk assessments being commissioned than is potentially warranted, to ensure applications did not fail.

The lack of guidance included in General BUAs leads to industry interpreting which environmental and product tests are necessary to demonstrate end of waste criteria, with a lack of clarity on appropriate routes for management of wastes leading to inconsistency and variability of submissions received from industry.

Since industry considers that the testing regime is unworkable, this therefore warrants investigation in a collaborative manner to determine:

- Whether the mechanisms for BUA sampling and analysis are proportionate to the risk of contamination, and
- Whether they serve the purpose of supporting industry to manage resources in accordance with the principles of the waste hierarchy, or instead hinder this objective.

This is not to say sampling and analysis is not needed, rather an indication that the current BUA mechanisms may not be working as they could be. The development of sampling and testing methodologies, which are consistently applied and proportionate to the level of risk, is suggested as being developed to support a more manageable process for industry, which should at the same time minimise over-burdensome costs. For example, a differentiated approach may be proposed for General BUAs e.g. agreed standards and specifications for certain end uses (outcome focused) and Specific BUAs that require ongoing monitoring until a beneficial reuse is proven/established.

8.3.5 Responsibilities for setting standards, criteria and environmental limits

Consultation with industry revealed the view that there is an disproportionate responsibility for setting environmental limits and standards for demonstrating end of waste criteria has been met, with EHP providing limited guidance to support applications. When preparing Specific BUA applications, environmental risk assessments are limited by a lack of criteria to aim for, with no clear guidance or protocol to work to.

Similarly, with respect to product standards, industry indicated that there is no clear guidance provided by EHP as to which products standards submissions should reference, in demonstrating that the resource is fit for purpose, or meets equivalent virgin product specifications. The lack of guidance provided leads to inconsistent application submissions, ambiguity and the potential for inconsistent advice provided as part of the application evaluation and outcome. Feedback from one workshop delegate included the fact that '*I don't know what height the high jump bar is set at*'.

In the absence of criteria for environmental testing and product standards, conditions for approval set by EHP are agreed in relation to the Specific BUA application submitted, with often '*arbitory levels of testing often imposed are imposed on industry*' providing the capacity for inconsistent conditions being imposed across industry. Industry expressed the view that criteria for demonstrating environmental limits and meeting product standards should be a '*shared responsibility*' between regulators and industry.

Industry further expressed the desire for EHP to consult industry earlier to enable it to contribute towards any proposals to review or amend conditions set as part of BUA guidance, which has the potential to impact on applications submitted. It is understood that BUA guidelines for Coal Seam Gas have recently been amended and are currently out to consultation. Representatives from the industry expressed the view that there has been limited opportunity to inform the development of the revised guidelines, with a desire to be consulted at an earlier stage. In this instance, the advice from EHP has been that in preparing BUA applications, the revised guidelines currently out to consultation should be duly noted, yet where any of the guidelines were revoked/amended following a period of consultation; this could have ramifications for application during development or evaluation.

8.3.6 EHP resources to approve BUAs

Concerns were raised during both the industry workshop and during interviews, in relation to the capacity and capability of resources within EHP to review, evaluate and process BUA applications. There is a perception amongst some of the industry stakeholders consulted, that EHP do not possess the level of technical resources

necessary to make qualified judgements in certain technical areas, such as environmental risk assessments, application to land and water.

One particular interviewee who had submitted a BUA application commented that in their experience, it was apparent, based upon the number and type of clarifications sought, that there was very little technical appreciation or understanding of their industry, or the commercial implications of the conditions being imposed as part of the initial approval. It was felt that the approval process lacked the technical experience needed to make informed judgements. In another example, the BUA application has requested, but failed on occasions, to access technical staff at pre-lodgement meetings. Given the time, cost and resources invested in multiple BUA applications, this is considered unacceptable to this particular representative.

These concerns raised by industry should be considered alongside a trend towards reducing the level of technical resources within the EHP team, which would potentially lead to less technical resources available to assess specific BUAs[14] and in line with department's new Regulatory Strategy.

The capacity of resources within EHP was also raised during workshop discussion, with reference to statutory response times. EHP is required to respond to a request from industry to assess their BUA application within 40 statutory days. Where application evaluation has not been concluded during this period, EHP must notify the applicant of their intention to extend the evaluation period for a further 20 days in order to complete the review. A scenario was discussed whereby in the event that a decision was not reached during this period, due to resourcing constraints within EHP, under the legislation, the BUA would be withdrawn and refused. Whilst EHP confirmed that this scenario has never occurred, the level of risk was considered by industry as being dis-proportionate, based on the time and cost involved in submitting a BUA.

A subsequent discussion with the BUA Team has indicated that BUA application evaluation always occurs within a space of competing timeframes. The team are responsible for reviewing and responding to permit applications (10 day statutory response time) and BUA applications (40 day statutory response time). Permit applications are often prioritised, due to the need to meet shorter deadlines, meaning BUA applications are often dealt with later, due to pressure to address the permit applications as a priority[15].

8.3.7 Delineation between waste vs. resource

The definition of regulated waste has been cited by industry and acknowledged by EHP as being one of the key inhibitors limiting the BUA process, whilst also being a reason for the uptake in BUAs, due to a desire by industry to pursue a less regulated and inexpensive route for management of wastes. In addition, the lack of delineation or guidance on the critical point at which a waste ceases to be waste and becomes a resource was identified as a key issue which encourages ambiguity, and a lack of clarity.

Specific BUA applications are evaluated by EHP against key criteria outlined in Chapter 8 of the WRR Act (including the waste hierarchy, likelihood of environmental harm and the benefit or sustainability of the proposed resource use) and it is acknowledged that guidance to industry in this regard will normally only be possible having considered the individual application and the particular circumstances. Yet the lack of guidance in General BUAs concerning the point at which a material is removed of regulatory control is limiting the uptake and use of the guidance and encouraging more applications for Specific BUAs.

Discussions with the BUA Team have subsequently identified that there is a lack of clarity as to what a BUA is approving; one member of team commented; *"Are we approving use of the resource? Or is it approving the activity?"* This is leading to the inclusion of approval conditions, which seek to continue to regulate use of the resource during transport and end use.

The wording contained within Section 8 of the Act (specifically those conditions which may be imposed on applicants as part of approval) could be interpreted as requiring sampling, monitoring and reporting on the use of the resource at its final destination. This implies that resources still need to be managed as if they were still a waste. Consequently there is no delineation between waste and resource and as a consequence with are potentially over-burdensome conditions imposed on industry when they are trying to recover resources. This is not to say that the quality and the application rates of a material to land (e.g. compost, water) is not important, but that there could be other mechanisms (e.g. specifications and protocols audited by industry funded Certification Bodies) that could distinguish between wastes and resources but do not compromise on environmental protection. Such mechanisms could result in a reduced regulatory role for EHP.

[14] Interview with BUA Team 07.06.13

[15] Interview with BUA Team 07.06.13

8.3.8 Cost/time for applications

Timescales associated with BUA application process has been highlighted as a limiting factor, with potentially significant consequences to both waste generators and resource end users. Combined with the lack of certainty as to when application were likely to be completed by, these factors impact on industry by failing to provide the knowledge required in order to make contingency arrangements.

One interviewee cited a 12 to 18 month application process from pre-lodgement meeting to approval. The consequences of this process were logistical and operational challenges in managing waste generation on site. One further interviewee referenced an experience whereby delays to approvals were experienced due to further clarifications being sought by EHP, requesting Information which has already been supplied in original applications.

Discussions with the Coal Seam Gas (CSG) industry[16] identified an example whereby it took ten months to obtain an amendment of the existing BUA for use of CSG water. The impacts of delays and the level of uncertainty for CSG applicants presents difficulties in trying to manage the water profiles across individual sites, whilst at the same time seeking to negotiate agreements with farmers for the application of water to land.

The costs associated with preparing and submitting a BUA application was also cited by representatives from industry during the workshop. EHP administrative charges for processing Specific BUA applications were identified as being only one of the associated costs, with consultancy fees, testing and in-kind time for preparing applications.

One industry representative commented how they would like the process of approving a resource for beneficial use not to have economic consequences on their business. Feedback obtained from another organisation indicated that application submission and responding to queries from WHP was responsible for 50% of one member of staff's utilisation, with further time burden on other colleagues within the company, including Senior Management.

8.3.9 Overlap of legislation

Discussions identified a number of experiences of individuals expressing the view that legislation for waste management was being inconsistently applied. The different regulatory mechanisms in question include:

(a) **BUA** – both General and Specific; and

(b) **Development Approvals (DA)** – required under the Sustainable Planning Act 2009[17], to manage the process under which development takes place, and manage the effects of development on the environment. The Act is largely focused on planning permissions for developments, but is some overlap in the purposes, for example, ensuring the sustainable use of renewable natural resources and the prudent use of non-renewable natural resources.

(c) **Environmentally Relevant Activities (ERAs) –** Permits which licence the operation of a range of activities regulated under Schedules 2 and 2A of the Environmental Protection Regulation 2008.

Examples identified during consultation include:

Both BUA and DA route approved for the same resource - Two separate applications which were received by EHP for use of the same resource, by different companies – one via a BUA application and one via a Development Approval amendment – both of which were approved by EHP. Two separate applications received by EHP for use of a quantity of drilling mud, by two different composters – one via a BUA application and one via a Development Approval amendment – both of which were approved by EHP. Conditions imposed on the composter as part of granting BUA included the need to test the material prior to it leaving the site at which the material had been generated. Due to the logistical challenges in doing so, the material was eventually secured by a competitor of the composter, via a non-BUA route (through the competitor seeking an amendment to their Development Approval conditions).

BUA conditions imposed beyond conditions contained within a DA – One interviewee expressed how after a long and protracted process of evaluation of pursuing a BUA application, the conditions imposed as part of the approval were over and above their existing permit conditions. The BUA application included a request to receive 3 or 4 deposits of sulphuric acid per year from one of their customers. Under their existing permit conditions, the

[16] Qualified through interview with EHP CSG Team 07.06.13

[17] The Sustainable Planning Regulations http://www.legislation.qld.gov.au/LEGISLTN/SLS/2009/09SL280.pdf

operator were licenced to handle and store 94% sulphuric acid in much larger quantities. Conditions imposed as part of the BUA included the need to construct a fully enclosed facility for receipt and storage of the small quantity of sulphuric acid from their customer – something not required as part of their licence conditions, and which would have cost circa $300K to design and construct.

Further examples have highlighted duplication between BUA and DA conditions, whereby the BUA could have instead referenced the DA/permit. The examples of overlap identified, particularly in relation to BUAs and DAs would suggest a lack of clarity as to specifically what the BUA is intended to approve – the activities or the use of the resource.

Discussion with the BUA Team determined that in assessing applications and setting approval conditions, conscious attempts were made to ensure that approval conditions imposed as part of a BUA are outcome focused, being more focused on the quality of the output product where the applicant has a sufficient DA in place. There is also acknowledgement however, that the potential for confusion exists, with staff sometimes unsure whether they should be approving the activity or the use of the resource, since the same team is responsible for reviewing both types of applications[18].

"One day individuals will be dealing with environmental harm issues, the next the same individuals will be reviewing a BUA application, which is sometimes difficult to turn their minds to the resource outcome being the driver."

This leads to overlap and over burdensome conditions being imposed, confusion and a lack of clarity as to when to use a BUA or a DA, and potentially inconsistent approvals being granted, leading to a unfair playing field across industry.

8.3.10 General BUAs are "too general."

Section 8.3.5 has cited the views of industry concerning a dis-proportionate responsibility for demonstrating environmental limits, markets and product standards. The 'generality' of General BUAs in setting defined end of waste tests for resources, leads to limited uptake by industry. The guidance contained in General BUAs is considered by industry as being too general to be of use, with a lack of definition as to what standards or limits are necessary to meet beneficial use conditions. In some instances industry are spending a considerable time deliberating whether to go for a General BUA, however due to the lack of clarity contained within the guidance the Coal Combustion Product and Coad Seam Gas industries in particular, have pursued a high number of Specific BUAs to approve generated waste streams for beneficial use. This results in additional time and cost to prepare applications for industry, and additional time and resources necessary for EHP staff to review and evaluate applications.

8.3.11 Specific BUAs are "too specific."

The previous sections have highlighted exampled whereby the conditions imposed on industry as part of a BUA approval have been considered by applicants as difficult or over-burdensome to implement. Specific BUAs were identified during the workshop as being "too specific" – in reference to the number and type of conditions imposed as part of an approval. Fundamental causes for over regulatory conditions being imposed is a consequence of a number of the issues described earlier in this section, including the definition of regulated waste, the lack of delineation between a waste and a resource, and the inconsistent application of different regulatory routes for waste, such as BUAs and DAs.

In reference to beneficial use, the EP Act states that if the approval of a resource under the WRR Act, (Chapter 8) is a *specific approval*, the resource stops being waste only in relation to the *holder* of the approval. Therefore the end user of the resource is limited to only the parties which are named within the Specific BUA application, limited the wider use of the resource in the same market or application elsewhere. It is considered that this restricts the marketability of the resource.

Further examples of where industry has experienced difficulties in implementing approval conditions are referenced below.

Examples where waste generators/product manufacturers have up to ten Specific BUAs in place – these include agreements in place between for the same resource supplied to different end users, each having their particular conditions to manage and requiring resources on behalf of the applicant and EHP to manage periodically (e.g. expiries).

[18] Interview with BUA Team 07.06.13

The approval organisation is made responsible for the BUA, with other sites or even competitors unable to process and market resources to the conditions stated in the specific BUA, without submitting their own Specific BUA application. A representative from the ash industry commented, *"by virtue of the conditions, we could be considered to be operating as a cartel."*

BUA applicants have also cited the restrictions of approval conditions in reference to being limited to sending the resource to only one end user. One particular applicant had identified a local outlet for their foundry sand. As part of their Specific BUA approval, they had successfully identified that a market existed, no impact to environment or human health and equivalent product standards, yet were unable to utilise a more local end use outlet under the conditions of their BUA without reapplying for an amendment (3 months to complete).

Conditions imposed requiring the end user to monitor use and application of the material. Conditions imposed on the CSG industry for the supply and use of water as a resource across agricultural land require the tracking of water during transportation and monitoring of water use in application. Tracking CSG water approved under a BUA is considered overburdening, with access to farmland invariably difficult to negotiate with farmers for the purpose of monitoring. Such conditions are expensive to implement.

8.3.12 Disincentives of using the BUA route

Where a BUA applicant has demonstrated suitable environmental risk assessment, waste management controls and market availability for a resource, the implications of including conditions which are more fitting for controlling waste means that an over regulatory approach is potentially been taken included as part of any specific BUA granted.

Transportation and treatment of regulated waste via an appropriate ERA facility is a more costly process for the waste generator, with cost being one of the key drivers for industry in pursuing a BUA route for waste management.

Feedback from the consultation process has determined how industry feel that the benefits for pursuing the BUA route are not balanced, due to the difficulties experienced achieving approval, or the financial and practical implications of implementing condition imposed. Where approval conditions require wastes to be tracked and monitored in end use, these conditions are similar conditions imposed on industry for handling of regulated waste. Few signals being given to industry as to what benefit the BUA route provides.

Views expressed by industry have included the perception that BUAs are only used whereby the applicant cannot obtain a Development Approval. Whilst a DA does not declassify a waste into a resource, the conditions for granting a DA are considered by industry as being easier to meet. Industry is therefore attempting to pursue the regulatory path which offers the least resistance, due in part to the current perceived difficulties in obtaining a BUA.

9. Impacts on industry

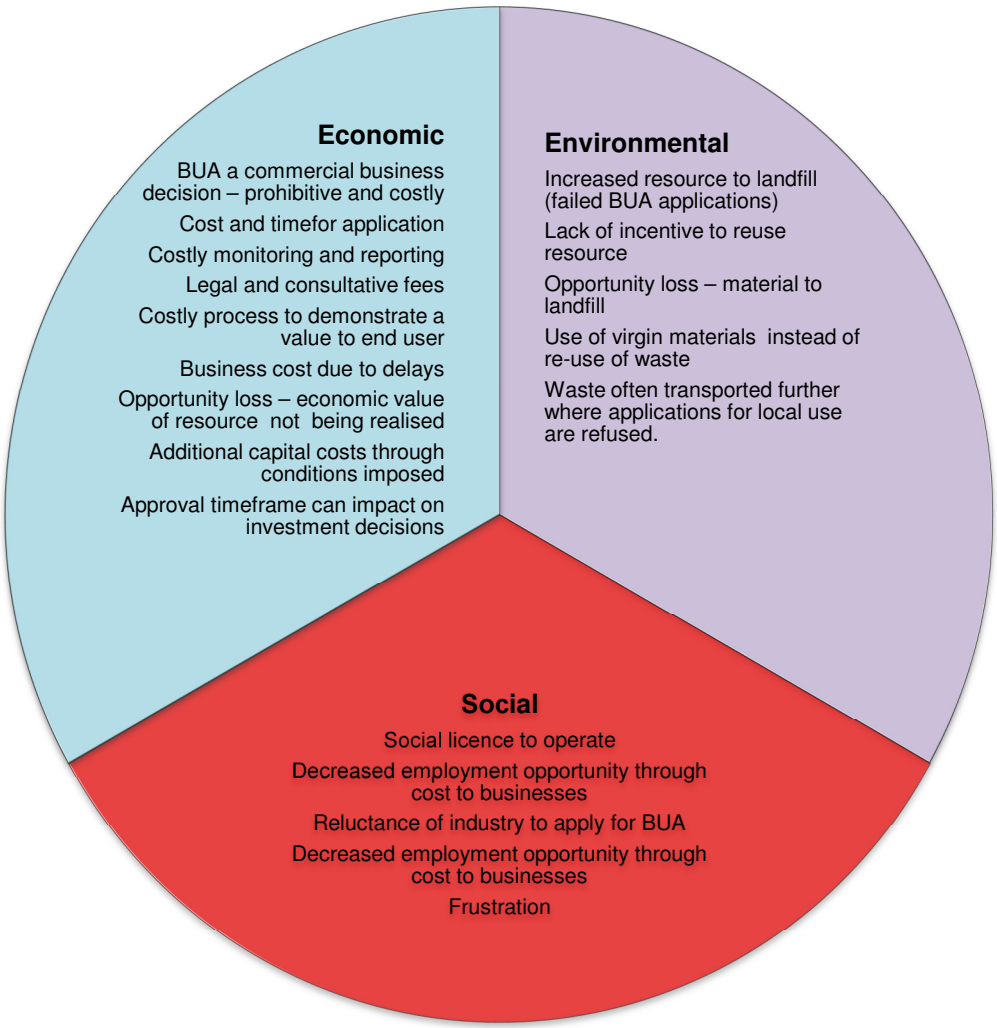
The consultation with industry stakeholders and internal EHP staff has sought to provide an assessment of the costs and benefits of the BUA system to Queensland businesses. Consultation has essentially been a qualitative review, drawing upon the experiences of those consulted to determine key issues and constraints within the process. A detailed quantification of the total impact of the BUA process has therefore not been undertaken, due to the project timescales. Wider industry stakeholder consultation would be necessary in order to more accurately quantify the social economic and environmental impacts of the BUA system which is more fully representative of the wider business community.

The impacts of the exiting BUA system has been drawn from:

- The small number of industry interviews conducted – interviewees were asked to draw on information and data which would illustrate the costs and benefits of their experience of the BUA process; and
- The Industry workshop – the workshop included a specific exercise, whereby individuals from industry were asked to provide examples of the specific or generic impacts of the BUA process upon their industry/business.

Figure 1 summarises the key impacts of the BUA system considered by industry following this consultation process.

Figure 1: Industry consultation: Social, environmental and economic impacts of the Queensland BUA process



9.1 Case Studies

The following case studies provide examples of the environmental, social and economic impacts resulting from limitation experienced by industry during a BUA application process. Note that some of the experiences expressed by those interviewed pre-date departmental changes by EHP to centralise and therefore improve the BUA application review and approval process.

9.1.1 Case Study 1: Company X

Background

Company X is located 15km south of the city of Townsville in North Queensland, Australia, and is an exporter and producer of zinc concentrates. Company X produces a Special High Grade of Zinc metals. Sulphuric acid, although a secondary product, is also an important part of Company X' production and is sold to clients for use in the production of fertilisers and other industrial uses.

BUA application

Company Y are a key client of Company X, the latter supplying sulphuric and hydrochloric acids for Company Y's galvanising processes. Company Y recently developed a new facility in close proximity to Company X. Previously Company Y were disposing of spent acid approximately 1,800 km away via a treatment disposal process, costing approx. $20K for treatment and disposal of 100,000 litres of waste acid containing zinc. Company Y and Company X therefore saw the economic and resource efficiency potential of returning the waste sulphuric acid containing zinc back to Company X, who would utilise the acid enriched with zinc within their own enrichment process, remove the zinc for re-use, and re-using the spent acid. Company X' facility is fully licenced, covered by an ERA. Similarly Company Y is a licenced galvanising facility. In February 2009 a BUA was logged by Company X with EHP to recover the spent material from Company Y.

Application process

Company X felt that a lot of clarifications were being sought by EHP, with information provided on top of the information contained in the original application. It was apparent, based upon the number and type of clarifications sought by DERM/EHP, that there was very little technical appreciation or understanding of our business, or the commercial implications of the conditions being imposed as part of the initial BUA. Additional clarifications requested related to activities and processes which were already approved as part of their existing ERA/licence conditions. Both parties did not get something useful in place until Feb 2011.

Impact of conditions imposed

Key conditions were imposed which nearly resulted in both parties deciding to walk away from the BUA application. Central to this was a condition requesting Company X to construct a fully enclosed facility for receipt and storage of the spent sulphuric acid from Company Y – only 3 or 4 quantities, which in terms of volume, were insignificant compared to the quantity of similar resources Company X were licenced to receive under their permit. Under normal site processing and operations, there are significantly more movements of similar materials on site, regulated under their existing site licence, which do not require any such conditions such as a fully enclosed facility.

Financial and environmental impacts

Costs for design and build of such a purpose built facility would have cost circa $300K. Financial and resource savings over this period could have been made, at a loss of approx. $10K (disposal option and transport cost to Company Y £20K vs. a cost neutral/no gate fee for return to Company X, no transport, $5K-10K per year for stack testing and monitoring, as per conditions of the BUA). Company Y were under pressure in terms of the quantity of sulphuric acid they could safely keep on site, and were therefore hoping and assuming a thorough but sensible review and evaluation timescale. They were certainly not expecting a 18 month turnaround, which caused significant issues on site, with respect to storage and logistics. Whilst able to cope and managing the acid safely on site, had they known the process would take as long as it did, Company Y would have put in place alternative arrangements earlier.

9.1.2 Case Study 2: Company A

Background

Company A are a leading global supplier of consumable and capital products to international markets, supplying products to a variety of industries, including mineral processing, engineered products, rail, power and cement. The company operates across the globe, with Australian operations across Queensland, New South Wales and Western Australia.

BUA application

Company A generate spent foundry sand as a by-product of their operations, in Runcorn. A BUA application was submitted in April 2012 for the re-use of spent foundry sand in composting and as a soil conditioner, with the end user, Company B. Both sites are operated in accordance with site permits, which regulate site activities.

Application process

Delays were experienced during the application process, due to further clarifications being sought by EHP, requesting Information which has already been supplied in original applications, or requests for information already contained within the site permit. Pre-lodgement appeared to be positive, however correspondence received was often contradictory, as less supportive than meeting discussions. It was felt that this was due to a lack of understanding or technical knowledge of the personnel.

Impact of conditions imposed

There has been much discussion and delay relating to conditions imposed as part of BUA approval, specific to the environmental limits for foundry sand material set as part of the approval. Company A believe that the pH levels to be too high, with maximums set for other metals also being too high, and have requested on what basis these maximums have been derived. No information has been provided, with respect to reference material, justifying why and how these levels have been set, leading to difficulties in challenging these limits.

Whilst the original BUA application provided approval to re-use the material via Company B, Company A identified a more local outlet for the material. However, the limitations of the existing approval is such that Company A are restricted to this single outlet, without going through an amendment process with EHP. Company A have experienced significant delays in their request to amend their approval.

Financial and environmental impacts

Due to the delays to their application amendment, Company A are currently unable to send material to the local outlet. Based on 34 km trip from Runcorn to Company B, transport alone for 15,000 tonnes of sand is $0.34 x 34 km x 15,000 = $173,400 per year for transport alone.

The limitations imposed on Company A' have resulted in the company being limited in their ability to seek more competitive markets for the foundry sand by-product. Company A are particularly concerned that were Company B to learn of the limitations of their BUA terms, they could potentially charge a premium for receiving the material. The costs associated which this could make Company A operations unviable, in the very least, foundry sand would need to be disposed of via local landfill routes.

Resources invested by Company A for the BUA application process has been significant. With respect to filling in application, responding to additional information requests and providing clarifications, Company A's Environment Manager estimates 50% of her job role has been taken up by BUA over the past 3 months, with additional input required from other environmental management staff/wider management input, means it is a significant burden on the business.

9.2 Detailed assessment of specific impacts on industry

The following section summarises key issues raised during the BUA consultation, whilst illustrating the specific impacts of each of these issues, Table 11.

Table 11: BUA Process – Issues and Impacts Assessment

Topic	Issue	Impact
Regulation		
Chapter 8 of the WRR Act	• Approval can be interpreted as requiring sampling, monitoring and reporting on the use of the resource.	• Implies that the resource is still to be managed as part of regulatory controls. • No delineation between waste and resource. • Potentially over-burdensome conditions.
Chapter 4 of the WRR Act 2011	• Reference to priority products contained within the WRR Act is ambiguous. Unclear how principle work in synergy with BUAs.	• Lack of clarity whether there is a strategy for developing BUAs for priority waste steams/products generated across Queensland.
EP Regulation (2008)	• Broad definition of regulated waste. High number of wastes listed, with no distinction between high and low risk waste. All C&I and C&D waste defined as regulated waste.	• Potentially over – burdensome controls being imposed on industry.
EP Act 1994	• Definition of regulated waste implies that all waste material has the potential to cause environmental harm and should be managed appropriately.	• A narrow interpretation of this definition, coupled with the broad definition of waste types listed as regulated wastes has the potential for regulators to impose over burdensome controls as part of BUA.
EP (WM) Regs 2008 (Schedule 7)	• No distinction between wastes which pose a greater risk to the environment and human health, and those which are potentially not hazardous and represent a lower risk.	• Blanket approach to regulatory controls when assessing BUAs and conditions imposed, regardless of environmental risk posed.
EP Regs 2008 (conditioning)	• Section 52 and Section 53 requires consideration of monitoring, reporting and transportation constraints as part of BUA approval.	• Over regulatory burden is potentially included as part of any Specific BUA granted.
Guidance and clarity		
Industry BUA guidance	• Guidance on when an application should be made in terms of whether it is for 'waste' or 'regulated waste' is confusing. • Guidance document is quite text heavy and at times, quite difficult to follow. • One guidance document has been developed, for all waste types and end use applications e.g. use on land, manufacture, construction. • Not clear whether there is a timeline for when specific approvals expire by i.e. once awarded how long specific approvals remain valid for. • No details on how long an application will take to process.	• Ambiguity, lack of clarity. • Difficult to follow and interpret the steps for applicants and requirements on industry. • Potentially leading to a variety of different applications being received, leading to difficulties in interpretation and assessment. • Lack of clarity for industry, potential for introducing uncertainty. • The expectation suggested to industry is that applications will take a maximum of up to 60 days to reach approval, leading to mis-match of expectation, limiting ability to provide contingency arrangements.
General BUA guidance	• Only 3 General BUAs developed by EHP for industry.	• Narrows the ability of industry to pursue this route, and increases the number of specific BUA applications received to EHP requiring assessment, increasing cost and resources to both industry and EHP

General BUA guidance	• Lack of guidance on the broader key tests which industry must meet (the resource is fit for purpose, occurs at a commercial activity etc.). • No statement of QLD commitment to waste hierarchy principles. • Very regulatory in tone and language which is not balanced by any supporting statement to encourage industry to working towards a more sustainable management for waste.	• The key test which industry must meet to achieve a BUA gets lost in the detail of the document – lack of clarity. • Lack of clarity on commitments of QLD Govt. to waste hierarchy. • Lack of encouragement, so sense of shared responsibility on achieving a sustainable waste strategy.
General BUA guidance	• Limited or no guidance on input materials, sampling or testing, monitoring, markets or product standards.	• Generic nature of General BUAs leading to low uptake by industry. • Higher pursuit of Specific BUA route by industry – increased time and cost for industry and EHP to submit/evaluation applications.
General BUA guidance	• Lack of clarity in the guidance with respect to the point at which waste ceases to be waste and becomes a resource – i.e. post, processing, sampling and testing.	• Provides ambiguity to industry, due to the lack of clarity regarding the point at which a resource ceases to be waste. • Higher pursuit of Specific BUA route by industry – increased time and cost for industry and EHP to submit/evaluation applications.
EHP website	• Access to the General BUA guidance only available on request. • Website generally poor on listing and describing relevance of legislation in relation to BUA	• Limits immediate access to documents by industry, additional administrative burden on EHP to forward documents. • Limited guidance on relevance of legislation to BUA for industry
BUA Application forms	• Lack of guidance as to how the applicant should structure the information provided within the application submission. • Does not request details of the applicants permit numbers.	• Potential for encouraging a range of inconsistent submissions to EHP in the way information and data is presented, taking additional time and effort to interpret. • Limits the ability of assessors to easily access permit details
EHP Assessment Report	• References requirements in WWR Act and EP Regs to consider setting conditions for BUA relating to transportation, tracking, monitoring and reporting with respect to the use of the resource.	• Over regulatory burden is potentially included as part of any Specific BUA granted.
Supplementary guidance developed for BUAs	• Guidance imposed on industry with no consultation - example of supplementary guidance for BUA developed to support CSG BUA, which is likely to become statutory, without involvement or consultation with industry	• Industry only able to respond during consultation phase, rather than during development of guidelines. • Lack of certainty as to whether industry can meet requirements set within guidance. • Limited early stage consultation limits ability of industry to inform debate, leading to a less informed and robust guidance document.
Guidance on legislation	• Industry feels that are not fully informed regarding current and forthcoming changes or introduction of new regulation/legislation.	• Lack of clarity, increased ambiguity, increased pressure on regulatory staff.
Ambiguity in meeting end of waste criteria	• There is often ambiguity whether applicants have demonstrated that an end of waste point has been reached.	• Leads to confusion as to what conditions EHP should be imposed on the applicant.
Inconsistency		
BUA approvals by EHP	• Inconsistencies between approvals for BUA by EHP e.g. for same resource.	• Lack of consistency in manner in which BUAs are implemented by industry. • Unfair playing field across industry.

BUA expiry	• Inconsistent application of expiry dates and timescales in which BUAs lapse.	• Lack of consistency in manner in which BUAs are implemented by industry. • Unfair playing field across industry.
Statutory timescales indicated in guidance not reflecting the timescale for application	• One experience identified, the timescales given for reaching an outcome took 12 – 18 months (including time taken to seek an amendment to conditions imposed).	• Mismatch of expectations between industry and EHP. • Potential operational challenges experienced by industry, absence of clarity, leading to potential logistical constraints, lost opportunities where waste no longer available.
Points of contact for EHP referenced in BUA correspondence	• Inconsistent points of contact referenced in BUA approvals for industry – examples of contact being Chief Executive, the Department, whilst other times the Regional Compliance Officer,	• Inconsistent communication channels being established for industry. • Potential for inconsistent information and advice being passed on to industry e.g. by. Regional Compliance Officers.
BUA approval between regional and central Officers.	• A legacy whereby BUA applications have been assessed by different Officers in different regions, not necessarily by individuals with specialist or industry knowledge. • Examples whereby regional EHP Officers have reviewed BUA applications, taking the same approach and setting the same conditions as would have been relevant for a Development Approval, rather than a BUA.	• Over-onerous conditions and constraints being imposed on industry and end users, with respect to monitoring, transport and use of the resource.
BUA expiries	• There is no legal obligation for EHP to inform industry that a BUA is due to expire.	• Instances where BUAs have expired, due to industry failing to submit a request to update a BUA.
Communication		
Pre-lodgement meeting	• No indication provided at pre-lodgement stage that BUA was not worth pursuing.	• Lost time and effort on behalf of the applicant.
Pre-lodgement meeting	• Feedback was received reflecting a view that whilst pre-lodgement meetings were initially positive, what was covered as part of meeting discussions did not reflect the subsequent actions or response from EHP.	• Different interpretation of discussions. • Lack of clarity to industry, implications for submission of application.
Pre-lodgement meeting	• Lack of technical presence at meetings	• Difficulty in industry being able to qualify technical details specific to their application.
Lack of clarity on approval conditions	• EHP were not willing to provide justification as to how environmental limits for waste set as part of approval conditions has been reached.	• Applicant was unable to challenge the basis of these approval conditions with EHP.
Guidance on expiry dates	• Example of where an applicant had submitted a request to update a BUA due to expire within 5 days, and were informed by EHP that "5 days was not a sufficient enough time ahead of an expiry date, and the BUA was subsequently cancelled."	• BUA expired and withdrawn. • Industry having to resubmit a BUA, requiring additional time and resource on behalf of both industry and EHP.
Communication type	• Perception that EHP were unwilling to respond via phone, or return calls, preferring to communicate via email or by letter.	• Unable to discuss or clarify particular issues raised in correspondence.
Communication type	• Limited opportunity for 1-2-1 discussions with EHP technical staff, with an inability to speak to individuals beyond the administrative staff.	• Lack of ability to discuss technical aspects of an application directly with EHP.

Lack of dialogue during application process	• Example of the conditions being imposed as part of a BUA approval after twelve months at point of approval. • The conditions were unworkable, with no communication at an earlier stage or opportunity to discussion. No opportunity for consultation until the final approval notice 12 months down the line.	• Applicant in this example nearly walked away from the process. • Inability to enter into dialogue concerning potentially unworkable conditions wastes time on behalf of applicant and EHP, with further time spent on negotiating workable solutions.
Difficulty in contacting EHP	• Industry stakeholder interviewed commented that they had received no contact concerning their application for six weeks following pre-lodgement meeting, despite "constant pestering".	• Frustration, lack of clarity, lost time.
Overburden of testing		
Testing	• Over burden of testing regime on industry in needing to demonstrate environmental or human health impact as part of BUA submissions, and as part of conditions set in approvals. • Lack of guidance provided to industry on need to test.	• Lack of clarity in guidance leads to more costly testing regime being employed to ensure applications unlikely to fail. • Over regulatory requirements on industry (monitoring, testing resource in end use) adds significant layer of cost to operations.
Testing	• Instances where waste receivers (e.g. composter) have been required to test every load of organic material accepted at facility.	• Over regulatory requirements on industry adds significant layer of cost to operations.
Standards and limit's		
Standards and limits	• Dis-proportionate responsibility for setting environmental limits and standards for demonstrating end of waste criteria has been met. • No clear guidance provided to industry as to which products standards submissions should reference.	• Inconsistent application submissions. • Ambiguity. • Potential for inconsistent advice provided as part of the application evaluation and outcome. • More applications via Specific BUA route, more costly research/consultancy fees.
Standards and limits	• "Arbitrary" levels of testing are imposed on the industry. There is a perception that when submitting specific BUAs, industry does not know 'what limits they are aiming for' with no protocol to work within General BUAs, there are no environmental limits to aim for.	• Uncertainty, time, cost and administrative burden
EHP resources		
Breadth of technical skills	• Perception that EHP do not have in place adequately qualified and experienced staff with commercial or industry experience, with the ability to make informed and qualified decisions.	• Lots of additional clarifications sought, back and forth. • Lack of understanding by EHP • Lost time • Unworkable conditions imposed as part of BUA application approval
High level of resources spent reviewing Specific BUA applications.	• Currently the BUA Team spends most of their time reviewing and assessing specific BUA applications, seeking clarifications and reviewing documents.	• Taking time and resources away from other areas such as enforcement activities and contaminated land assessments.
Proposals to reduce EHP technical staff	• Internal trend towards reducing the level of technical resources within the EHP team, which will include resources at the disposal of the BUA team to assess Specific BUA applications.	• Reduced technical resources could limit the ability of EHP to response sufficiently and effectively as part of industry consultation, application evaluation and general communication.

Narrow interpretation of aims and objectives of BUA	• Difficulties in being able to switch between regulating to ensure prevention of environmental harm and approving a resource for beneficial use. • A perception that BUA assessments are undertaken by individuals who come from an environmental protection background, with a narrow interpretation of the aims and objectives of BUA, with respect to encouraging activities which promote the treatment of waste in accordance with the waste hierarchy. • One day individuals will be dealing with environmental harm issues, the next the same individuals will be reviewing a BUA.	• Inconsistent guidance and conditions being imposed as part of approvals.
Delineation between waste vs. resource		
End of waste criteria	• Lack of clarity internally and externally as to the point at which a resource is no longer a waste.	• Lack of clarity as to the level of environmental protection required. • Over regulation imposed as part of approval conditions in BUA.
Cost/time for applications		
Application timescales	• Example whereby it took ten months for to obtain an amendment of the existing BUA for use of CSG water. • An example of a 12-18 month application process from pre-lodgement meeting to approval. • Specific BUA process adds additional costs to industry operations – including consultancy, testing, and administration.	• Significant time and resource consequences to both waste generators and resource end users. • Lack of certainty as to when application were likely to be completed by. • Difficulties experienced in management of resources, inability for applicant to 'hold on' to resources. • Failing to allow industry to make contingency arrangements. • Financial costs.
Overlap of legislation		
Inappropriate conditions imposed in BUA.	• Acknowledgement that there is the potential for confusion, whether the activity or the resource should be the focus of the conditions. • Historical examples of where EHP staff have wrongly applied conditions as part of a BUA, which would be more appropriate for an ERA i.e. regulating the activity rather than removing regulator barriers to end use. • BUAs were often assessed in isolation of reviewing an applicant's ERA.	• Unfair playing field across industry • Confusion as to when to use a BUA vs. ERA. • Over regulatory conditions imposed on use of resource.
Lack of joined up approach to reviewing approvals (BUA/ERA)	• Precedent whereby EHP approved use of the same quantity of organic waste via two separate applications – one application was a BUA, one application was an ERA, from two competitors. • The two applications were reviewed by different individuals within EHP.	• Unfair playing field across industry • Confusion as to when to use a BUA vs. ERA • Over regulatory conditions imposed on use of resource.

Competing timeframes for statutory response times	• BUA application approval occurs in a space of competing timeframes. • In addition to BUA applications (40 day statutory response time) the BUA Team are also responsible for reviewing and responding to ERA applications (10 day statutory response time). • Permit applications are often prioritised, due to the need to meet shorter deadlines, meaning BUA applications are often dealt with later, due to pressure to address the permit applications as a priority	• Other permit applications taking precedent over BUA applications, causing longer response times to process applications.
General vs. Specific BUAs		
General BUAs too 'general.'	• No guidance of a number of critical areas, such as environmental limits industry is required to meet for end use of material, relevant industry standards resources are required to meet.	• Lack of guidance provides uncertainty, adds time and cost to industry. • Lack of clarity contained in General BUAs leads to increased number of applications via Specific BUA route. • Industry spending a lot of time considering whether to go for a General BUA or a Specific BUA.
Specific BUA restricts use to holder and end user.	• Specific BUA approval is limited to use by only the applicant and the specified end use. • Other sites or even competitors are unable to process and market resources to the conditions stated in the specific BUA, without submitting their own Specific BUA application. By virtue of the conditions, industry argues this could be interpreted as a cartel. • Examples where companies have up to 10 Specific BUAs in place, allowing narrow uses of the resource, with a range of end users, all using the resource in similar applications. • Restriction on holder of Specific BUA using a different outlet to the end use stated in the approval (regardless of whether end use is the same) with requesting amendment to BUA.	• Industry is limited in their ability to apply conditions set within a specific approval to wider sites and industries. • Higher administration and application costs for more applications. • Limits wider positive use of waste as resources.
Conditions of Specific BUA regulatory in nature	• Conditions imposed requiring the end user to monitor use and application of the material.	• Burden of monitoring use of resource in end use adds significant time and cost to process. • Requiring monitoring, tracking and reporting of resource in end use introduces perception that resource is waste. Leads to difficulties in marketing of resource, due to perception of it being a waste.
Disincentives of using BUA		
Limited drivers for using BUA route over other regulatory mechanisms.	• Approval conditions require wastes to be tracked and monitored in end use, which are similar conditions imposed on industry for handling of regulated waste. • Perception that BUAs are only used whereby the applicant cannot obtain an ERA. • Perception that industry (where possible) should avoid the Specific BUA and instead go down the ERA path.	• Few signals being given to industry as to what benefit the BUA route provides. • Industry feels that the benefits for pursuing the BUA route are not balanced.

Developing more General BUAs		
Strategic decision making to support case for developing more General BUAs	• Decisions taken to develop General BUAs are based on the number of applications received e.g. 10 from Hanson for aggregates etc.	• Lack of strategy to address priority waste streams. • Industry is developing numerous costly Specific BUA applications before a decision is made to develop a General BUA.

10. Conclusions and Recommendations

The BUA process is an important mechanism towards a more sustainable resource use across the State of Queensland and achieving the aims and objectives of the WRR Act, particular in relation to:

- Promoting waste avoidance and reduction and resource recovery,
- Reducing consumption of natural resources,
- Minimizing the impact of waste, and
- Ensuring a shared responsibility between government, business and industry in delivering more sustainable outcomes for waste.

EHP recognise the importance of the BUA process in building confidence in end markets for recovered resources, and therefore are committed to ensuring that there are clear incentives for industry in pursuing BUA applications.

The review of the BUA framework is primarily being undertaken within the context of the development of a new waste strategy, and secondly as part of the review of how regulated wastes are managed in Queensland.

One of the emerging themes of the waste strategy is to increase the 'productivity' of wastes, through managing more wastes as resources and develop new end markets, with an emphasis of finding local solutions to local waste issues. EHP is considering the long term role of the BUA policy framework in delivering on the objectives of the Waste Reduction and Recycling Act that aims to:

- Promote waste avoidance and reduction, and resource recovery and efficiency actions;
- Reduce the consumption of natural resources;
- Minimise the disposal of waste by encouraging waste avoidance and the recovery, reuse and recycling of waste.

The review of how regulated wastes are managed in Queensland forms part of the Government's election commitment to work with waste industry and generators to develop an industry-led strategy for Queensland. The review will also help the government to deliver against its election commitment to reduce regulatory burden and costs for business. The BUA process has, in the most part, been utilised by operators wishing to deregulate wastes from needing to be managed as a 'regulated' waste. However, it is important to note that the BUA process is accessible to all wastes, not solely regulated wastes. The current Queensland legislative framework dealing with regulated waste management under review includes:

- Definitions: including waste (s13 EP Act), regulated waste (s65 EP Regulation) and limited regulated waste (EP Regulation);
- Schedule 1, EP (Waste Management); Reg 2000 (Waste tracking);
- Schedule 2, Part 12 (Waste Management, waste related environmentally relevant activities) - EP Regulation 2008;
- Schedule 7 (List of regulated wastes) (EP Regulation)
- Chapter 8 (Beneficial Use Approvals) (Waste Reduction and Recycling Act).

10.1 Conclusions

The consultation has found that in a number of cases, the balance of responsibility in demonstrating that each of the key tests for beneficial use have been achieved, lies with industry. There are also examples whereby applications for BUA have been granted by EHP, approving use of a material as a resource, yet the conditions imposed as part of the approval are often more stringent for transportation and end use of a resource, including monitoring and reporting in end application than if the waste were to continue being managed as a regulated waste.

It is considered that the causes of these constraints are in part due to:

- the wording and the interpretation of the definition of regulated waste within the Environmental Protection Regulations 2008;
- limited clear and consistent internal guidance for approval conditions;
- the lack of clarity as to whether a BUA considers the 'resource' or the 'activity';
- limited of guidance to industry with regards to when a resource reaches an end of waste point;

- a culture of regulatory practice and environmental enforcement performed by the Department, within which approving use of a waste and removing regulatory control engenders uncertainty – due largely to conflicting limitations of guidance noted above.

A summary of some of the most significant findings of the review include:

- Conditions imposed as part of a Specific BUA approval are often more stringent for transportation and end use of a resource, than if the waste were to continue being managed as a regulated waste.
- Specific BUAs which are considered to be "too specific" – in reference to the number and type of conditions imposed as part of an approval.
- Over regulatory conditions being imposed as a consequence of legislative constraints, such as the definition of regulated waste - but also the lack of delineation between a waste and a resource in legislation and therefore guidance.
- Inconsistent application of different regulatory routes for waste, such as BUAs and Environmentally Relevant Activities (ERAs).
- A lack of a clear path in either Regulation or guidance, by which regulated wastes can become 'de-regulated' leading to over-onerous conditions imposed as part of a BUA application approval on the waste generator and the end user.
- Conditions limiting the exchange and use of a resource between more than two parties identified contained within a Specific BUA application, regardless of whether the resource can be used by a different end user in the same end market.
- Instances where different regulatory mechanisms for managing resources, namely BUA and ERAs, have been used to manage the same source material via different application routes.
- Limitations with General BUA guidance and application process, considered to be limited in providing suitable guidance to 'resource producers' how to sufficiently create a resource from a waste.
- BUA guidance which is limited by a lack of clarity concerning environmental limits for resources, markets and associated product standards. Due to their 'generality' uptake and use are limited.
- A higher number of Specific BUA applications submitted by industry, due in part to a lack of confidence in General BUAs, consequently adding significant cost and time to both industry and EHP.
- Instances where BUA applications have been either abandoned, withdrawn, or not attempted, due to what is perceived by industry as being a lack of clarity of definition between a waste and a resource, limitations in the BUA approval process, and an over regulatory approach to taken to the use of the resource in its end market.
- The limited number of General BUAs developed by EHP for priority waste streams and materials has also impacted on the ability of industry to pursue this route to resource.

Consultation with both industry and EHP staff has acknowledged significant number of issues and concerns with the existing BUA process, of which a number relate to either regulatory constraints, or the procedural mechanisms for BUA application and approval process. Consultation has identified dissatisfaction with the process for applying for and approving a resource for beneficial use. Quantification of the full impact of these limitations, on the number of BUA applications delayed, withdrawn, refused, or abandoned by industry, has not been undertaken within the scope of this study, due to the project timescales.

Qualitative feedback gained through interview and workshop consultation has revealed a number of examples whereby industry has experienced significant frustrations in their attempts to receive approval for a resource. Examples have been identified whereby BUA applications have been either abandoned, withdrawn, or not attempted, due to what is perceived as a lack of clarity of definition between a waste and a resource, limitations in the BUA approval process, and an over regulatory approach to taken to the use of the resource in its end market.

The ability of industry to successfully apply BUA guidance has been demonstrated as being limited by a lack of clarity and information concerning environmental limits for resources, markets and associated product standards. Consequently, the uptake and use of 'General' BUAs are limited, with industry instead choosing to pursue the 'Specific' BUA route, as a path in which industry submit more detailed applications to demonstrate that risk assessments, market and product tests have been met. The limitations of the 'General' BUA route consequently add a significant layer of cost and time to industry, but also a burden on upon EHP in terms of the requirement to review and consider each application submitted.

The limited availability of guidance suggests that insufficient investment has been made to develop the tools and supporting technical material that would enable the approvals team to communicate to applicants the information that is required and for them to make an informed assessment of applications that are received. To some extent this is understandable given the requirements of the WRR Act and the wide number of waste streams and circumstances that could be encountered. However, this has left the approvals team open to criticism from industry Joint working between EHP, industry and end users of resources should be promoted to develop user-friendly tools and to build up a library of shared knowledge.

The limited number of General BUAs developed by EHP for priority waste streams and materials has also impacted on the ability of industry to pursue this route to resource management and encouraged a greater number of applications via the 'Specific' route. It is also unclear how priority products identified within the WRR Act relates to a strategy for developing more sustainable resource use through development of BUAs.

The interaction of the various regulatory mechanisms for controlling the use of waste, in particular the appropriateness of a Development Approval, has also impacted on industry. The consultation exercise has observed a lack of clarity as to whether BUAs should regulate the activities associated with the generation of a waste or the approval of use of a resource, leading to inconsistent application of regulatory controls, and approval conditions more appropriate for an ERA.

Whether perceived or realised, there is also a view amongst a number of industry stakeholders consulted, that the resources at the disposal of EHP internally, to support the assessment and evaluation of BUA applications, is technically and commercially limited. The experience of those consulted has indicated long and protracted application processes and whilst it is considered that this is not solely due to resource constraints, examples of delays due to additional information being sought (requesting information that had either been submitted previously, or was referenced as part of an applicant's ERA) has been identified. Whilst information has been requested, it has not been possible to determine the breadth of skills available internally within EHP to support evaluation and assessment of BUA applications.

Taking into account the information gathered during the course of the study, **it is considered that the BUA process is not sufficiently robust as a mechanism to support the aims and objectives of the WRR Act**. The constraints highlighted by industry are likely to significantly limit the use of General BUAs and exert pressure upon the Specific BUA route, in terms of application submission, timescale and quantity.

Furthermore it is considered that due to these same limitations, the ability of the BUA process to accommodate emerging industries and wastes will also be limited without changes to the regulatory framework, improved guidance and clarity, and supporting mechanisms which include engagement with industry to help inform and increase the level of 'buy in' by wider stakeholders.

Furthermore it is considered that due to these same limitations, the ability of the BUA process to accommodate emerging industries and wastes will also be limited without changes to the regulatory framework, improved guidance and clarity, and supporting mechanisms which include engagement with industry to help inform and increase the level of 'buy in' by wider stakeholders.

It is acknowledged that the key provisions relevant to the BUA process are currently contained within the WRR 'Act' and therefore any wholesale changes or amendments to BUA process will be a protracted process. Conversely, 'Regulations' are easier to adapt and amend. In light of the difficulties in amending provisions contained within Statute, consideration should be given to how provisions are structured in legislation in future, to ensure that only high level principles or objectives are contained within a relevant Act, to ensure that where changes are recommendation and are necessary, restrictions in wording set within a particular Act do not impede such changes.

10.2 Recommendations

The recommendations are provided with the intention of ensuring that industry are supported in their efforts to manage wastes as resources effectively, whilst maintaining measures which enable the Department of EHP to effectively monitor and regulate the management of waste across Queensland in line with environmental legislation and the new Regulatory Strategy.

EHP is fully committed to responding to the findings of the research, and has already made changes and improvements to the BUA application process following initial findings from the consultation. These include access to BUA guidance and application forms available on the EHP website.

A summary of the high-level recommendations are included in Table 12, with more detailed improvement actions and success measures included in Table 13.

Table 12: BUA high level recommendations

Recommendation	Comment
Develop more General BUAs to include specific guidance on waste inputs, environmental limits, standards and end markets for resources	To align with the direction of the department's *Regulatory Strategy* the development of a greater number of General BUAs that define environmental outcomes and in doing so, limit the number uptake of Specific BUAs. This will reduce overall costs for application preparation and associated charges incurred by industry, and reduce administration burden for EHP in having to assess applications. Whilst this would require up-front investment by stakeholders (regulators and industry) to address limitations of existing General BUAs (and potentially develop a further number of General BUAs to cover other priority waste streams) pay back in the form of greater uptake of BUAs and reduced regulatory and administrative burden for industry and EHP should re-compensate this investment.
Review legislation and structure of provisions across Act and Regulations applicable to BUA	The definition of regulated waste under EP Regulations 2008 is broad. For example all wastes from Commercial and Industrial and Construction Demolition sources that contain a constituent type listed in Schedule 7 are regulated wastes and therefore subject to additional waste management controls with no distinction between wastes which pose a greater risk to the environment and human health, and those which are potentially not hazardous and represent a lower risk. It is recommended that the Regulations are revisited, with a risk-based approach undertaken to declassify certain waste types, providing distinction between high, medium and lower risk wastes.
Establish Industry Working Groups	Development of industry working groups for specific industries or waste streams will demonstrate a genuine commitment to consult on issues of relevance at an early stage and consider a number of the barriers and opportunities to improve resource recovery of wastes. Working groups should include regulators (including policy and relevant technical staff), representative industry (including waste generators and end users) and other relevant stakeholders, including academia and technical professionals. Immediate areas of focus should include opportunities to support and improve existing BUA guidance, address perceived technical limitations and discuss any opportunities for co-funding to develop new BUAs (e.g. environmental risk assessments and research into product standards)
Development of standard approval 'outcome focused' conditions for BUA applications (General and Specific)	In line with the *Regulatory Strategy* standard approval conditions could be developed to reduce levels of inconsistency across applications, improve clarity on internal administration of applications and increase confidence amongst industry. A suite of standard approval guidelines for specific industries, end uses and waste streams is recommended, with a commitment to review standard conditions regularly.
Improving level of guidance currently included in General BUAs	The consultation has identified industry dissatisfaction with the existing structure and content of General BUA guidance documents, considered to be 'too general' Improvements are necessary to address gaps in areas including product or resource environmental standards and limits, markets and product standards. This will require time and research and the process should to be undertaken jointly between EHP and industry to ensure that consensus is reached on key issues and that the guidance is considered by relevant parties to be fit for purpose, practical and applicable.

Review internal resources to support BUA evaluation and assessment	Under the existing mechanisms for BUA, resources which are appropriate to the task are fundamental in ensuring the BUA Team are supported technically, and industry is able to consult and receive timely feedback on any queries raised. Technical resources to attend pre-lodgement meetings, and availability of specialists in key application areas (application to land/soil science, general industry chemistry) are two examples of resourcing priorities identified as being areas which under the current evaluation and approval process would benefit from a review. It is noted however, that the new Regulatory Strategy will move towards industry being responsible for demonstrating that an activity does not cause harm to the environment sits with industry, rather than EHP.
Review of communication lines for BUA application and approval process	Reviewing and improving communication lines, particular in reference to pre-lodgement meetings, guidance to industry on timescales for application process, and standard response times for returning calls to industry are areas which are likely to improve relationships with industry.
Clarify if BUA provisions are regulating activities or specifying when a waste becomes a resource	. Greater clarity and guidance on the appropriate use of different regulatory mechanisms for the management of waste and resources will provide more certainty to industry.
Review of similar mechanisms for de-classification of waste	Quality Protocols and the End of Waste application process in the UK (similar to General BUAs and Specific BUAs in Queensland) are the mechanisms by which the England and Wales Environment Agency support and work with industry reach end of waste criteria. Quality Protocols exist for priority waste streams, including organic compost, tyres, glass and biodiesel, with clear guidelines on input materials, processing requirements, sampling and testing, environmental risk assessment and product standards. Similarly, New South Wales have up to twenty BUAs in place for priority waste streams. A desk review of end of waste criteria is recommended to identify the relevance to Queensland's priority waste streams. Where industry are able to demonstrate such limits are achieved, this should be a precursor that the resource no longer poses any risk, and therefore continual monitoring in its end use need not be undertaken. Sampling and monitoring, would therefore instead take place at the stage following the point at which a waste has been processed or transformed, to check that it meets a specification or a standard for a comparator product. This approach will also help to address the previous issue.

Table 13: BUA improvement actions

Topic	Improvement action	Priority	Responsibility	Timeframe	Success measure
Regulation					
Section 8 of the WRR Act	• Review Section 8 of Act and provide further clarity as to the conditions upon which resources can be treated as such, and where waste management controls (such as sampling, monitoring, reporting, tracking) are removed.	• High	• EHP	• Short	• Clarity on when waste management controls are no longer imposed for use of a resource.
WRR Act – reference to 'priority products.'	• Develop a strategy and guidance on how 'priority products' referenced in WRR Act drives BUA strategy (Specific and General).	• Medium	• EHP	• Medium	• Clarity on priority waste steams/products generated across Queensland to inform a strategy for development of General BUAs.
EP Act - Schedule 7	• Using a risk-based approach, declassify certain waste types, and providing distinction between high, medium and lower risk wastes.	• High	• EHP	• Short	• Revised schedule of wastes classified as regulated waste, appropriate to level of risk to human and environmental health.
EP Act – definition of regulated waste	• Revise definition of regulated waste. Revise definition away from a 'blanket approach' moving from a position where all wastes from C&I and C&D sources are considered as being regulated (regardless of risk, composition, type), towards a position more appropriate to the level of risk.	• High	• EHP	• Short	• Improved guidance to industry on wastes which are regulated and those which are not.
EP Regs – Section 52 and Section 53	• Revise wording to provide clarity on the point at which regulatory controls (including monitoring, sampling, reporting, transport etc.) cease.	• High	• EHP	• Short	• BUA approval conditions set which do not impose over-burdensome regulatory control in end use of resource.
Guidance and clarity					
Website	• Update and improve website guidance on when BUAs are encouraged -specifically in relation to where BUAs are appropriate for regulated/non-regulated wastes – e.g. a 'decision tree.'	• High	• EHP	• Short	• Improved clarity to industry where BUAs are appropriate.
Website	• Updated guidance to industry on website – specifically the relevance and interaction of legislation pertinent to BUAs.	• High	• EHP	• Medium	• Improved clarity on current and forthcoming legislation for industry.

Website	• Provide access to General BUAs on EHP website, rather than industry having to request access to documents.	• High	• EHP	• Short	• Improved access to BUAs for industry. • Reduced administration for EHP.
Website	• Develop an on-line register to collect individuals contact details (name, job role, company, email etc) where General BUAs are downloaded, to track use of the approvals.	• Medium	• EHP	• Medium	• Register of companies adopting General BUAs for resource management.
BUA guidance	• Review BUA guidance to industry and develop a user friendly format which is less bureaucratic and legislative-speak in tone, and less 'text heavy'. Provide further clarity on the timeline and steps for application process, and average timescales for application process.	• High	• EHP/Industry working groups	• Short	• Improved clarity to industry.
BUA application guidance	• Revise existing BUA application form – develop a suite of application forms for industry – application for resource use on land, in manufacture in construction, in energy.	• Medium	• EHP	• Medium	• More specific tailored questions applicable to resource use directed to applicant. • Ability to direct specific applications to appropriate individual internally for review.
BUA application guidance	• Improve application form guidance – specifically how applicants should structure an application. • Include a request for details of applications permit number.	• High	• EHP	• Short	• Consistently structured applications submitted by industry and received by EHP, saving time. • Ability for EHP to quickly identified relevant permits held by applicants for related site operations.
Guidance on legislation and regulation	• Work with trade associations (e.g. ACOR, WRIQ) to identify opportunities to improve level of guidance to industry – specifically legislation and regulation specific to waste management.	• Medium	• EHP	• Medium	• Shared responsibility between EHP and trade association to update industry on matters related to waste legislation and regulation.
Assessment report template – references to WRR Act and EP Regs.	• Review internal guidance to EHP included in guidance – specifically conditions which can be imposed as part of granting BUA, where these are appropriate and in instances where regulatory controls should be rescinded.	• High	• EHP	• Short	• BUAs approved by EHP, which do not reflect over-regulatory burden on transportation and use of resource in end use.
Supplementary guidance for General BUA	• Where additional guidance is developed to support BUAs, leading to significant changes and requirements for industry, undertake consultation with industry earlier.	• High	• EHP	• Medium	• Ability for wider stakeholders to inform development of BUAs and BUA guidance ahead of wider public consultation.

Industry consultation	• Develop Technical Advisory Groups (TAGs) to include representatives from industry, regulatory bodies/EHP and academia/consultancy to ensure wider consultation on issues, such as development of further BUAs, or significant changes to existing BUAs. • Individual TAGs would be developed for specific resource streams e.g. tyres.	• High	• EHP/Industry working groups	• Medium	• Ensuring workability, appropriateness, shared ownership and practicality of guidance and BUAs by wider industry.
BUA expiry guidance	• Provide further clarity within the guidance and approval notice to industry confirming deadlines within which they need to resubmit a request by (e.g. "renewals need to be submitted 30 days before a BUA expiry"), to ensure BUAs do not expire.	• Medium	• EHP	• Short	• Guidance and standard communication documents to industry updated.
Testing					
Product testing	• Review guidance provided via General and Specific BUAs (as part of standard approval conditions, see above) to ensure frequency of testing is proportional to the quantity/volume of resource being processed. • Develop guidelines on testing for General BUAs which are proportional to quantity/volume of waste processed proportionality and are focused on the output material, rather than the input of wastes received.	• High	• EHP	• Medium	• Improved guidance to industry on testing regime which is proportional to waste quantity processed and is output focused.
General BUAs					
General BUA guidance development	• Improve and increase the level of guidance provided within General BUAs – to include guidance on input materials, processing, sampling frequency and product testing methods, end markets and product standards. • Clarify the point at which a resource ceases to be waste and becomes a resource. • Develop improvements to BUA guidance with industry (e.g. TAGs), through early engagement, to ensure ownership, practical application and relevance to operations.	• High	• EHP/Industry working groups	• Medium	• Improved guidance and clarity to industry on pathway to declassification of a waste. • Higher uptake and use of General BUAs by industry. • Decreased number of Specific BUA applications applied for by industry and reviewed by EHP. • Reduced costs to industry in pursuing Specific BUA route – consultancy fees, research etc.

General BUA development	• Develop a higher number of General BUAs which reflect priority waste streams and products, consistent with aims of WWR Act. • Undertake industry consultation to inform and establish priority wastes which justify the development of a General BUA. • Review number of applications for Specific BUAs to also inform which wastes justify development of a General BUA.	• High	• EHP	• Medium	• Higher number of BUAs developed and used by industry. • Decreased number of Specific BUA applications applied for by industry and reviewed by EHP for priority waste streams.
Clarification on end of waste criteria					
End of waste criteria	• Improved detail and guidance provided in General BUAs (see above) • Standard approval conditions for BUA Team, for different waste types, industries and end users, to support Specific BUAs (see above), providing guidance on when end of waste criteria (and therefore regulatory controls are lifted) is met.	• High	• EHP	• Short	• Clarity internally and externally as to the point at which a resource is no longer a waste.
EHP resources					
Internal EHP resources	• Review and appraisal of resource capacity and availability to support BUA application evaluation – to include technical specialists in the following disciplines – application to land/soil science, construction product development and use, manufacturing/general industry, waste to energy. This could include a technical panel, made up of representatives including industry specialists in the above fields, comprising academics and consultants to ensure independence from industry.	• High	• EHP	• Short	• Evaluation of technical resource capacity completed. • Improved confidence of industry across all stages of application process
Approval conditions	• Develop a standard set of approval conditions for EHP staff, for different waste types, industries and end users – including approval conditions, end of waste criteria, EHP point of contact for applicant and BUA expiry details, guidance on when applicants should update BUAs to prevent expiry.	• High	• EHP	• Short	• Consistent and improved approval conditions applied by EHP. • Level playing field for industry, with respect to BUA application review.

Application review process	• Review and develop standard operating procedures to ensure clear internal guidance on responsibilities for reviewing/evaluating BUA applicants i.e. Central rather than Regional Officers. • Communicate procedures via email or training where necessary.	• High	• EHP	• Short	• All BUA applications directed, received and reviewed by Central BUA Team.
Pre-lodgement meeting	• Review allocation of resources to attend pre-lodgement meeting, to ensure technical aspects pertinent to industry applications can be addressed during the meeting.	• High	• EHP	• Short	• Industry is able to obtain feedback on technical queries during pre-lodgement meetings and progress applications. • Clear, consistent and informed advice provided.
Data management	• Review and appraise internal Ecotrack database – with respect to the ability of EHP staff to search for live, or historic applications (ERA/BUA) with clients	• Medium	• EHP	• Medium	• Consistency in responses. • Applications evaluated using all available information held, including ERA's.
Communication	• Review options to improve access to, and communication with EHP staff (including technical and administrative staff) during application process.	• High	• EHP	• Short	• Ability for industry to access EHP for information and updates specific to their application.

Appendix A. Summary of waste management legislative provisions referenced in the report

1.0 The Waste Reduction and Recycling Act 2011

The Waste Reduction and Recycling Act provides a specific legislative framework . The central aims of the WRR Act are to encourage the proper use of resources by improving ways of reducing and dealing with waste. It provides the detail on the delivery of the Regulations. The overall objectives include:

- to promote waste avoidance and reduction, and resource recovery and efficiency actions;
- to reduce the consumption of natural resources and minimise the disposal of waste by encouraging waste avoidance and the recovery, re-use and recycling of waste;
- to minimise the overall impact of waste generation and disposal;
- to ensure a shared responsibility between government, business and industry and the community in waste management and resource recovery;
- to support and implement national frameworks; and
- to develop objectives and priorities for waste management and resource recovery.

1.0.1 BUA provisions

Chapter 8 of the WRR Act provides specific and detailed reference to BUAs, in terms of process and conditions[19] for approval of beneficial use. In summary, if waste can be determined as having a beneficial use then it is no longer legally regarded as a waste and is termed a resource. The WRR Act promotes many of the same or supporting principles as the BUA is intending to achieve. In particular, the legislation includes the following guidance for BUA application approval:

- Application process – details which should be included as part of an application
- Criteria for deciding applications – including (but not limited to) the likelihood of environmental harm, benefit and sustainability of use of resource, waste management principles and waste hierarchy;
- Process for granting applications – including the process for setting conditions of approval;
- Conditions for granting approval – which may relate to (but not limited to) the origin and destination of the resource, transporting or storage of the resource, sampling, analysis, monitoring or reporting in relation to the resource, measures to be taken to minimise environmental impact associated with using the resource.

The resource may be approved for beneficial use through a specific approval or a general approval. A specific approval means an approval of a resource of which only a stated person has the benefit of the approval. A general approval means an approval of a resource of which everyone has the benefit including the end-user. .

The legislation further states that if a waste is approved as a resource, and the conditions of the approval are met, it is no longer considered a waste for the purposes of the EP Act 1994 as described in Section 13 of that Act (see definition of waste below).

1.0.2 Priority product provisions

Chapter 4 of the WRR Act aims to encourage and, in certain circumstances, mandate that persons involved in the life of a product share responsibility for ensuring that there is effective waste management for the product and for management of the impacts of the product throughout its life, including end of use management.

Chapter 4 also enables the development of a draft priority product statement for one or more products including defining a range of criteria that a 'product' would need to satisfy to qualify as a priority waste, such as:

- where it contains toxic or hazardous material; or
- where there is the potential to reduce the environmental impacts, resource consumption, social impacts, disposal costs;
- and/or it could create or improve business opportunities.

[19] Waste Reduction and Recycling Act 2011, Chapter 8,

1.1 Environmental Protection Act (1994) – Definition of waste

The object of the EP Act is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends. The Act contains the definition of 'waste'

Under Section 13 of the EP Act waste is defined as:

(1) any thing, other than a resource approved under the WRR Act, chapter 8, that is:

(a) left over, or an unwanted by-product, from an industrial, commercial, domestic or other activity; or

(b) surplus to the industrial, commercial, domestic or other activity generating the waste.

Example of paragraph (a) —
Abandoned or discarded material from an activity is left over, or an unwanted by-product, from the activity.

(2) Waste can be a gas, liquid, solid or energy, or a combination of any of them.

(3) A thing can be waste whether or not it is of value[20]*.*

(4) For subsection (1), if the approval of a resource under the Waste Reduction Act, chapter 8, is a specific approval, the resource stops being waste only in relation to the holder of the approval.

(5) (5) Despite subsection (1), a resource approved under the Waste Reduction Act, chapter 8, becomes waste—
(a) when it is disposed of at a waste disposal site; or
(b) if it is deposited at a place in a way that would, apart from its approval under that chapter, constitute a contravention of the general littering provision or the
illegal dumping of waste provision under that Act—when the depositing starts.

10.3 Environmental Protection (Waste Management) Regulation 2000

The *Environmental Protection (Waste Management) Regulation 2000* is made under the Environmental Protection Act 1994 and sits alongside the *Environmental Protection Regulation 2008*

The EP Waste Management Reg (2000) provides a framework for certain types of wastes and wastes management activities. The Regulation aims to minimise the impact of waste on the environment including, in particular, the impact of waste so far as it directly affects human health; and establishing an integrated framework for minimising and managing waste under the principles of ecologically sustainable development.

The Regulation includes provisions for the movement of wastes into and out of Queensland under the National Environmental Protection Measure for Controlled Waste, ..

Part 4 of the Regulations[21] describes the regulatory requirements applying to those responsible for transporting wastes in relation to waste tracking with specific responsibilities assigned to the generators, transporters and waste handlers, the objective of which is to ensure the administering authority has the information it needs to manage the environmental risks from the movement of waste.

Tracking provisions relate to regulated wastes of a type listed under Schedule 1 of the EP WM Reg a The tracking provisions require persons to keep records, pass on information to receivers of waste, and provide information to the administering authority.

10.4 Environmental Protection Regulations 2008

10.4.1 Definition of regulated waste

The definition of regulated waste sits under Section 65 of the Environmental Protection Regulation 2008, and is defined as:

"(1) Regulated waste is waste that:

(a) Commercial or industrial waste, whether or not it has been immobilised or treated; and

[20] Environmental Protection Act 1994 Chapter 8, Division 2, Page 45

[21] Environmental Protection (Waste Management) Regulation 2000, Part 4, Division 1, Page 22

(b) is of a type, or contains a constituent of a type, mentioned in schedule 7.

(2) Waste prescribed under subsection (1) includes—

(a) for an element—any chemical compound containing the element; and

(b) anything that contains residues of the waste[22]."

For the purposes of defining 'regulated' waste the Regulation references a separate Schedule (schedule 7) containing seventy one waste streams,

10.4.2 Environmentally relevant activities

The Regulations also contain clarification and definitions as to what constitutes an Environmentally Relevant Activity (ERA), which includes a broad range of industrial processes and activities contained within Schedule 2 of the Regulations, including (but not limited to) manufacturing activities, extraction activities, fabrication activities, food production and processing, saw milling and timber fabrication and waste management activities, including regulated waste activities. ERA's have thresholds, with fees based on the environmental risk associated with the activity. ERAs are regulated by EHP, with operators required to hold the relevant permits ERAs of relevance to the study include waste related ERAs 52 – 62 and in particular to the activities that manage regulated wastes.

The Environmental Protection Act 1994 Section 52[23] of the Environmental Protection Regulations (Regulatory requirements for all environmental management conditions) states that the administering authority must consider whether to impose conditions about the following matters:

(a) implementing a system for managing risks to the environment;

(b) implementing measures for avoiding or minimising the release of contaminants or waste;

(c) ensuring an adequate distance between any sensitive receptors and the relevant site for the activity to which the decision relates;

(d) limiting or reducing the size of the initial mixing zone or attenuation zone, if any, that may be affected by the release of contaminants;

(e) treating contaminants before they are released;

(f) restricting the type, quality, quantity, concentration or characteristics of contaminants that can be released;

(g) the way in which contaminants may be released;

(h) ensuring a minimum degree of dispersion happens when a contaminant is released;

(i) protecting environmental values, and meeting quality objectives, under relevant environmental protection policies;

(j) recycling, storing, transferring or disposing of waste in a particular way;

(k) rehabilitating land to achieve particular outcomes;

(l) measures for the ongoing protection of environmental values that are, or may be, adversely affected by the activity;

(m) if under an environmental objective assessment, the assessor is not satisfied an environmental objective has been achieved, measures for minimising the adverse effects of not achieving the environmental objective.

Section 53[24] of the Environmental Protection Regulations (Regulatory requirements for all environmental management conditions) states that the administering authority must consider whether to impose monitoring

[22] Environmental Protection Regulation 2008, Chapter 5, Part 1, Page 35

[23] Environmental Protection Regulations 2008 Regulatory requirements for all environmental management decisions, Part 2, Division 1, Page 29

[24] Environmental Protection Regulations 2008: Regulatory requirements for all environmental management decisions, Part 2, Division 1, Page 29

conditions concerning the release of contaminants from the activity on the receiving environment. In doing so, the *administering authority must consider:*

(a) the potential impact on the receiving environment of—

(i) the activity to which the decision relates; and

(ii) the release of the contaminant;

(b) the characteristics of the contaminant;

(c) the potential for a control measure to fail and the effect of a failure of a control measure on the receiving environment;

(d) the protocols relevant to monitoring the release of the contaminant;

(e) whether the monitoring should be continuous or intermittent.

Within this section of the Regulations, monitoring is further defined as:

(a) monitoring the quantity, quality, characteristics, timing and variability of the release;

(b) monitoring indicators of the effective operation of control measures;

(c) monitoring the characteristics of the receiving environment;

(d) assessing the effectiveness of remedial or rehabilitation measures;

(e) monitoring the impact of the release on the values, objectives and biota in the receiving environment;

(f) analysing monitoring data against objectives and standards including, for example, by predictive modelling;

(g) reporting the results of monitoring in a stated form and timeframe;

(h) reporting on the time and way in which the release is made to the receiving environment.

With regards to these conditions, the key focus is directed on activities, rather than use of resources deemed to be de-classified as waste, through demonstrating a beneficial use.

Appendix B. EHP Interview Write Up

Appendix C. Industry interviews

Appendix D. Industry workshop delegate list

David Moy	WMAA
Haydee Forster	JJ Richards
Chrystal Lau	Australian Council of Recycling
Carolyn Collins	Arrow Energy Pty Ltd
Craig Heidrich	Ash Development Association of Australia
Leo Talllam	Stanwell Corporation (for ADAA)
Stefanie Roth	Stanwell Corporation (for ADAA)
Cassandra Koutouridis	Cement Concrete & Aggregates Australia
Elissa Clarke	Arkwood Organic Recycling
Ben Dearman	CQ Compost
Matthew Barnes	CQ Compost
Roy Wilson	NuGrow
Mark Scott	AGRST
Dan Stuart	NuGrow
Peter Martin	Hanson
Andrew Richie	Hanson
Trent Williams	Origin
Maribel Pegler	Origin
Kylie Hughes	EHP, Waste Policy and Legislation
Tamara Miller	EHP, Waste Policy and Legislation
Janelle Rees	EHP, Waste Policy and Legislation
Justin Carpenter	EHP, Energy Regulation
Kylie Coleman	EHP, BUA/Contaminated Land Team
Alex Forest	SKM
Darren Perrin	SKM

Appendix E. Industry workshop agenda and run-sheet