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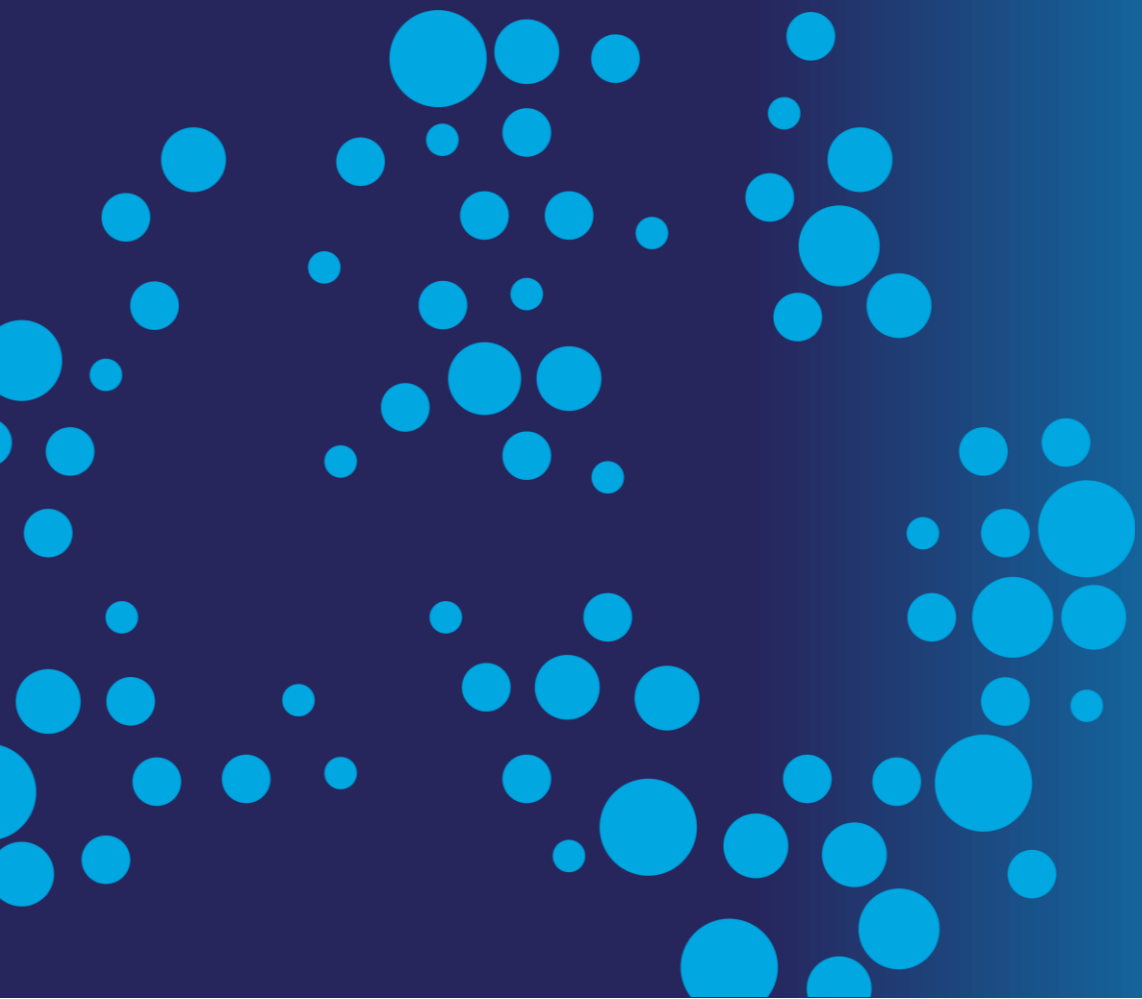
DRAFT

Environment Improvement Program Report

DRAFT A

October 2024

FOR INFORMATION ONLY



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Internal Approvals

Prepared by:	Reviewed by:	Approved by:
Approved as draft		

EPA Approval – not applicable for this document

Not Applicable

Glossary

Term	Definition
µg/m^3	micrograms per cubic metre
µm	micrometre
°C	degrees Celsius
km	kilometre
m	metre
m/s	metres per second
m^2	square metres
m^3	cubic metres
m^3/s	cubic metres per second
dB(A)	A unit of measurement, decibels(A), of sound pressure level with frequency filtered to closely match frequency response of the human ear
Nomenclature	**Definition**
TSP	Total suspended particulates
PM_{10}	particulate matter with a diameter less than 10 micrometres
$PM_{2.5}$	particulate matter with a diameter less than 2.5 micrometres
Abbreviations	**Definition**
ABC	Adelaide Brighton Cement Ltd
Air EPP	Environment Protection (Air Quality) Policy 2016
BATEA	Best available technology economically achievable
CKD	Clinker Kiln Dust
CLG	Community Liaison Group
CM 1, 6, 7	Cement mill 1, cement mill 6, cement mill 7
CS#, CR#, CE#	**C**linker **S**upply, **C**linker Reclaim, Clinker **E**xport, conveying system transfer points
EET	Emission Estimation Technique
EIP	Environment Improvement Programme
EP Act	Environment Protection Act 1993
EF	Emission factor
EPA	Environment Protection Authority
MM	Fringe Materials Management System
NPI	National Pollutant Inventory database
SA EPA	South Australian Environment Protection Authority

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1 Executive Summary

This DRAFT Environment Improvement Program (EIP) report has been developed for preliminary review in preparation of the EIP project list for the purpose of informing the regulator and key stakeholders of Adelaide Brighton Cement (ABC) intentions. It follows the approved Options Assessment report where community sentiment was utilised in developing key focus areas and re-framing the rationale for project selection.

Following a period of community consultation, detailed in the Community Consultation Report (Appendix A), there is strong community support for projects to further improve community communications, particularly in relation to residents having the chance to opt in for alerts when there are environmental matters which may have an impact on the community and additional information and consultation about the use of Refuse Derived Fuel (RFD), dust management, dust monitoring, noise, odour and amenity (including additional tree planting).

The objective of the EIP is to deliver improvement for the environment and community by implementation of feasible projects to reduce dust and noise emissions. In response to community feedback, the list also includes communication and amenity projects. Timeframes shown in this report cover the current licencing period, which is until 31 October 2027, however some projects may grow beyond this timeframe as part of the site strategic plan and inform the next round of EIP projects.

A summary of the Draft EIP projects includes a summary of intent is shown in Figure 1 and includes compliance steps and timing. All projects are required to go through the capital approval process with timing included in the phasing is representative of current thinking and may change as the project develops.

	Source	Project	Compliance Actions													
			2024 Q4	2025 Q1	Q2	Q3	Q4	2026 Q1	Q2	Q3	Q4	2027 Q1	Q2	Q3	Q4	
	COMMUNICATION															
1	**Communication**	Provide additional communication via alert to community in addition to website updates	1.1	1.2												
2	**Communication**	Provide additional information about RDF quality controls at a dedicated CLG meeting	2.1	2.2												
	CLINKER SHED, DUST COLLECTORS AND HANDLING															
3	**Clinker Shed**	Develop and implement program to further mitigate dust emissions from clinker shed	3.1	3.3	3.4		Confirm	Assessment and timing of potential changes to be considered following detailed review								
4	**Dust collectors**	Dust collector performance review and upgrade	4.1	4.2	4.3	4.4	Confirm	Assessment and timing of potential changes to be considered following detailed review								
5		Early detection of emissions from dust collectors by improving performance monitoring			5.1	5.2		5.3	Complete	Asseessment and timing of potential further changes based on risk						
6	**Clinker handling**	Upgrade key clinker dust collector infrastructure to enable return of dust to process	6.1	6.2				6.3	Complete							
7		Upgrade cooler bag filter dust pumping system to transfer dust to cement mill 6	7.1		7.2	7.3	Complete	7.4	Complete							
8		Modify CS2 cooling sprays to minimise dust lift from the conveyor	8.1	8.2	8.3			8.4		Complete						
9		Self closing doors on critical seal doors	9.1		9.2		Complete									
10		Design and install dribble chute and belt cleaners for clinker handling and transfer points				10.1		10.2		Complete	Broader plan may be extended across site following assessment of effectiveness of initial changes					
11		Develop and implement program to better seal clinker transfer galleries and cement mill			11.1	11.2	11.3					11.4	Complete			
12	**Heat exchanger**	Repair heat exchanger inlet ducting to improve containment.	12.1	12.2	Complete											
	STACKS 4A & 4B															
13	**Stack 4A:**	Review 4A stack input stream performance and recommend improvement including economically viable technology upgrades for a) cooler bag filter, b) 4A ESP, c) 4A Bypass ESP. Apply learnings to 4B where applicable	13.1	13.2	13.3	13.4	13.5	Assessment and timing of potential changes to be considered following detailed review								
	MATERIALS HANDLING AND OTHER BUILDINGS															
14	**Dry Mix Plant (Cement)**	Improve overfill protection and increased dust collection in dry mix plant	14.1	14.2	14.3			14.4	Complete							
15	**Dried slag transfer tower**	Improve dust emissions from slag transfer tower			15.1	15.2	15.3		Complete							
16	**Materials Management System**	Reduce fugitive dust from additive materials management areas	Changes to structure being implemented					16.1		16.2	16.3	16.4	Complete			
17	**Limestone Stockpile**	Install additional wind curtains on east side of limestone stockpile			17.1		17.2	Complete								
	MONITORING															
18	**Monitoring - CCTV**	Install additional CCTV cameras to provide visual of key emission sources	18.1	Complete												
19	**Air quality monitoring network**	Improve monitoring network to measure larger particles across community and improve small particle reporting	19.1, 19.3	19.4	19.5		19.6	19.7	19.8	19.2		Complete				
20		Revise dust dashboard and update action responses, including predictive weather	20.1		20.2			20.3	Complete							
	NOISE															
21	**Kiln Shell Cooling System**	Design and implement noise reduction options for kiln shell cooling fan			21.1	21.2		21.3	21.4	Complete						
	ODOUR															
22	**Site Odour**	Complete odour study of site and assess odour contributors		22.1			22.2	Assessment and timing of potential changes to be considered following detailed review								
	CONSULTATION															
23	**Tree planting**	Plant additional trees to provide noise, dust and amenity benefit to commuity	23.1		23.2											

Figure 1: *Summary of intent*

2 Scope & Regulatory Setting

The objective of the EIP is to deliver improvement for community and environment by implementation of approved projects to reduce emissions from site such as noise and dust.

This EIP is relevant for the Birkenhead Premises as described by Licence 1126, specifically condition *Environmental Improvement Program (U-1554).* The EIP will be mainly delivered over the remaining time of the licence period from now until 31 October 2027. Projects extending beyond this timeline will be taken up by the next EIP and will be clearly indicated as such.

The EIP has been informed by the Options Assessment report, approved by the EPA in early October 2024 as required by licence condition *Assessment of Air Particulate Mitigation Options (U–1560)* along with *Noise Mitigation Options (U-1559)*.

The EIP requires community consultation to be completed and taken up which is genuine, transparent, and respectful. A summary of community consultation has been provided in Section 4 and a full report in Appendix A (available for the final). Below is a copy of the EIP condition from the Licence.

3.7 ENVIRONMENT IMPROVEMENT PROGRAMME (U - 1554)
The Licensee must:

3.7.1 develop and submit to the EPA an Environment Improvement Programme (EIP) to the satisfaction of the EPA by the compliance date listed below;

3.7.2 undertake public consultation in the course of developing the EIP;

3.7.3 ensure that the EIP includes, but need not be limited to:

- *a) a summary of the results of public consultation undertaken in the course of developing the EIP;*
- *b) detailed actions, timeframes and milestones to be undertaken by the Licensee to fully implement the preferred noise mitigation option(s) identified pursuant to condition U-1559 of this licence;*
- *c) detailed actions, timeframes and milestones to be undertaken by the Licensee to fully implement the preferred air particulate mitigation option(s) identified pursuant to condition U-1560 of this licence;*
- *d) a methodology and framework for reporting to the EPA, including frequency, to demonstrate progression and completion of the EIP actions;*
- *e) a methodology and framework to assess the effectiveness of the actions detailed in the EIP; and*
- *f) a methodology and framework for providing public access to the EIP, quarterly and annual reporting;*

3.7.4 implement the EIP upon approval in writing by the EPA.

Compliance Date: 31-May-2024

3 Background

The EIP has been a mandatory part of the licence for the last 15 years due to site dust and noise emissions needing to improve to address community concern and conform to current air quality policy. Over this period multiple EIP projects have been implemented via several programmes, resulting in improvement in fugitive dust emissions from site. A baseline depositional dust emission is still occurring and in May a dust event occurred which impacted community when maintenance on the clinker shed enabled clinker, limestone and gypsum dust to be emitted from site.

Adbri acknowledges the impact this has had on community and continues to work respectfully with residents and the regulator to address individual concerns.

The event highlighted the need to improve baseline and ad-hoc dust emissions from site and that emissions of clinker dust need particular focus. Adbri is reaching out to local and global experts to assist with determining most feasible, applying improvement options across the EIP project suite and drive site continuous improvement for environmental and community benefit.

A previous EIP was submitted in May as required by the Licence. The EPA required strengthening of the link between the options assessment and the EIP programme of work and improved community consultation, which we are seeking to show in submission of this revised EIP.

This EIP represents commitment by the Birkenhead site to reducing dust emissions. It is worth noting that improvements to the clinker shed which are already in place are expected to be further enhanced following some key studies to ensure any further work undertaken will result in best possible outcomes. Similarly, studies planned for the stacks include short- and long-term equipment assessment. Additionally, improvements to the dust collectors includes RDF dust collectors and will be applied by priority in a risk-based approach.

4 Community Consultation Summary

Consultation with community is a key part of the development of OA & EIP process and overall evaluation of the programme once implemented. Since the May event we have continued to call for and listen to community sentiment and developed focus areas and methodology directly related to recent concerns raised by the community.

Community consultation for development of the OA & EIP began with listening to community concern and sentiment including:

- Community Liaison Group meetings, 3/6/2024, 22/7/2024, 22/8/2024
- Complaints received over recent months.
- Discussion with residents requesting car wash vouchers.
- Speaking with residents at EPA/SA Health drop-in session, 19/8/2024
- Feedback from other stakeholders.

Learnings from this process led Adbri to develop focus areas and change rational methodology enabling assessment of options in a manner to capture and reflect recent concerns raised by the community.

Key changes include developing and prioritising focus areas; dust, communication, monitoring, odour and noise, with dust being further prioritised into clinker, cement and general dust types. Community improvement categories based on emission type, height, rate and frequency are also given additional focus.

Formal OA & EIP community consultation offered between 2/9/2024 and 27/9/2024 included:

- CLG meeting, 2/9/2024
- Adbri drop-in sessions, 5/9/2024 and 7/9/2024
- Web-site links and updates

Feedback from the consultation process requested additional consultation to be provided for the draft EIP and includes:

- CLG meeting, 14/10/2024
- Adbri drop-in session 15/10/2024
- Providing copies of the draft EIP to residents

Included in the feedback were general themes about communication, dust management and monitoring, noise, odour and amenity. Projects related to these themes have been included as shown below.

Theme	EIP Project
Communication	1, 2
Dust management – clinker and cement	3 - 14
Dust management – raw materials	15 - 17
Dust monitoring	18, 19, 20
Noise and Odour	21, 22
Amenity	23

Table 1: *Consultation themes and related EIP projects.*

Other feedback from community included ideas some of which are better addressed via other means or future EIP programs include topics such as hard noise barrier, earthen noise barrier, sheds over all raw materials, pneumatic conveyors, power dependency, property & cars including cleaning methods, site tours and other amenity improvements.

These feedback ideas have been considered throughout the development of the EIP program and a full description of community consultation undertaken throughout assessment of options and development of EIP projects is included in Appendix A.

5 EIP Compliance Actions

Preferred options selected by the options assessment process are shown below with project stages and timing shown. These project compliance actions are expected to be tracked and implemented according to the steps and dates below, noting that timing is to the end of the quarter shown. Projects have a level of priority due to being EIP compliance actions and are still subject to capex approval processes which may affect timelines.

NO.	PROJECT DESCRIPTION	TIME
1	***Provide additional communication via alert to community in addition to website updates.*** **Opportunity:** Establish ability to allow the community to opt-in for an alert notification to be sent to their phone or email **Benefit:** Community proactively informed of operational updates	
1.1	Letter box drop asking people to register for notifications. Offer option for "general news" and / or "operational alerts"	Q4 24
1.2	Set up and implement	Q2 25
2	***Provide additional information about RDF quality controls at a dedicated CLG meeting.*** **Opportunity:** Host a special CLG session to explain why RDF is used and quality aspects of use of RDF on site. Update website with information presented at the CLG meeting. **Benefit:** Community informed about use of RDF in the cement industry	
2.1	Use Dec CLG to confirm questions from community that may need to be addressed.	Q4 24
2.2	Prepare slides and information for RDF CLG session in March. Upload information to website	Q1 25
3	***Develop and implement program to further mitigate dust emissions from clinker shed.*** **Opportunity:** In addition to ongoing maintenance, use best practice perspective for dust control and material handling improvements. **Benefit:** Better containment and reduced dust to community	
3.1	Liaise with technology specialists to bring best practice perspective to shed plan.	Q4 24
3.2	Review existing shed airflow design and complete structural report of shed to incorporate into shed plan. Review material handling options for internal shed clinker movement to determine any improvement to current handling practice.	Q2 25
3.3	Develop plan for any changes for potential implementation (based on 3.1 and 3.2)	Q4 25
3.4	Initiate Capex approval and agree communication plan for stakeholders	Q1 26
3.5	Continue existing maintenance on shed, maintain sealing of gaps and clinker transfer points.	Q4 24-25
3.6	Final scope and confirmation of any changes. Assessment and timing of potential changes to be considered following detailed review and capital approval.	Q2 26 2026-2027

NO.	PROJECT DESCRIPTION	TIME
4	***Dust collector performance review and upgrade.*** **Opportunity:** Minimise emissions from dust collectors venting externally by changing physical components to improve reliability. **Benefit:** Minimise emissions from dust collectors venting externally	
4.1	Complete independent review and prioritise dust collectors (complete) *External consultants have completed independent review of dust collectors and a detailed scope of changes has been generated which includes modifications to* • *Fixing, removing or replacing Silo FP4 dust collector* • *Raw materials Silo 1, 2, 9 dust collector* • *Central Tower CS1/CS2 dust collector #3* • *CR2/CR3 dust collector* • *Removal of buildup around dust collectors* • *Where measurement indicates that the emission concentration of dust is above BATEA concentration of 10mg/Nm3, investigate causes and required fixes.* BATEA means "best available technology economically achievable". It is defined, in particular, the European Union's recommendations for the cement industry and considered by SA EPA as being a reasonable and practicable approach to technology changes.	Q4 24
4.2	Plan work for priority dust collectors per 4.1	Q1 25
4.3	Initiate Capex approval and agree communication plan for stakeholders.	Q2 25
4.4	Complete minor changes and scope major changes Assessment and timing of potential major changes to be considered following detailed review and capital approval.	Q4 25 2026-2027
5	***Early detection of emissions from dust collectors by improving performance monitoring.*** **Opportunity:** Minimise emissions from dust collectors venting externally by using bag leak detection systems (BLDS), focussing on priority dust collectors not already utilising this technology. **Benefit:** Enable early response and improve upon current planned maintenance and observation monitoring. *Following from 4.1 independent review the following recommendations were made for improvements to the dust collector management system:* • *Implementation of BLDS on all outside venting dust collectors that currently do not have such systems, prioritised according to risk.* • *The adoption of a data management system that considered data generation, collection, transmission, storage and integration, processing and analysis, visualisation and the application for which the data is intended.* • *Regular sampling to validate that monitoring systems are functioning as designed.*	

NO.	PROJECT DESCRIPTION	TIME
	There are 66 dust collectors venting externally, of which 9 have BLDS installed. It has been identified that a further 9 dust collectors make up the majority of all emissions from dust collectors and as such will increase the amount of BLDS monitors from 9 to 18 over the next 18 months. Adbri will commit to doing an annual risk assessment on all dust collectors not fitted with BLDS. Adbri commits to a comprehensive maintenance system for operating, monitoring and maintaining all dust collector systems.	
5.1	Determine equipment selection pricing	Q2 25
5.2	Initiate Capex approval and agree communication plan for stakeholders.	Q3 25
5.3	Installation and commissioning, major shut required. Review installation of new BLDS installed post commissioning.	Q1 26 Q2 26
6	***Upgrade key clinker dust collector infrastructure to enable return of dust to process.*** **Opportunity:** Improve effectiveness of return pipework from containment controls to conveyors and improve dust extraction efficiency. **Benefit:** Reduces blockages and spills with improved dust extraction efficiency.	
6.1	Confirm scope and initiate capex request. Currently includes CS5/6 DC return pipework.	Q4 24
6.2	Installation in major shut with capex approved.	Q1 25
6.3	Installation in following year if capex extended. Complete and test installation.	Q1 26 Q2 26
7	***Upgrade cooler bag filter dust pumping system to transfer dust to cement mill 6.*** **Opportunity:** Improve cooler bag filter dust transfer system to cement mill 6. **Benefit:** Reduces blockages and spills with improved dust extraction efficiency	
7.1	Confirm scope & emission benefit	Q4 24
7.2	Capex approval if required and source materials	Q2 25
7.3	Installation Q3 25, complete if simple	Q4 25
7.4	Installation if complex Q1 26, complete if complex	Q2 26
8	***Modify CS2 cooling sprays to minimise dust lift from the conveyor.*** **Opportunity:** Change cooling spray arrangement to reduce dust carried by steam. **Benefit:** Reduced dust lift off	
8.1	Confirm scope and prepare sourcing of materials	Q4 24
8.2	Optional if minor modification, install during major shutdown	Q1 25
8.3	Capex approval if required for more complex solution	Q2 25

NO.	PROJECT DESCRIPTION	TIME
8.4	Installation Q1 26, and complete for more complex solution	Q2 26
9	**Self-closing doors on critical seal doors** **Opportunity:** Identify critical doors and means for improving infrastructure to ensure they stay closed. **Benefit:** Stop drafts through buildings and pick up of dust	
9.1	Scope includes roller doors, PA door, mill access doors	Q4 24
9.2	Seek capital approval where needed beyond maintenance, rolling out repairs and installation throughout 2025.	Q4 25
10	***Design and install dribble chute and belt cleaners for clinker handling and transfer points.*** **Opportunity:** Develop conveyor transfer improvements to reduce spillage inside towers and conveyor heads. **Benefit:** Redirect spillage back into process and reduce risk of fugitive emissions	
10.1	Scope and complete capex approval for worst case transfer point. Order materials.	Q3 25
10.2	Installation during major shut Completion and assessment of effectiveness from initial installation. Broader plan may be extended across site following assessment of effectiveness of initial improvement.	Q1 26 Q3 26 2026-2027
11	***Develop and implement program to better seal clinker transfer galleries and cement mill 6 building.*** **Opportunity:** Install covers over remaining gaps in clinker transfer galleries and CM6 building **Benefit:** Better sealing and containment of dust	
11.1	Audit CM6 building and clinker transfer galleries to ensure all gaps are noted, starting additional maintenance of transfers and building as soon as possible.	Q2 25
11.2	Scope improvements and order materials, apply for capex approval where required	Q3 25
11.3	Complete repairs throughout 2025 for minor repairs	Q4 25
11.4	If changes are needed, requiring the major shut for installation, ensure capex approval and materials are available for 2027 shut	Q1 27
12	***Repair heat exchanger inlet ducting to improve containment.*** **Opportunity:** Implement repairs to heat exchanger inlet ducting **Benefit:** Better containment of dust	
12.1	Scope and procuring parts	Q4 24
12.2	Installation during 2025 major shut	Q1 25

NO.	PROJECT DESCRIPTION	TIME
13	**Review 4A stack input stream performance and recommend improvement including economically viable technology upgrades for a) cooler bag filter, b) 4A ESP, c) 4A Bypass ESP. Apply learnings to stack 4B where applicable.** **Opportunity:** Determine short- and long-term improvements for stacks and implement in systematic way. **Benefit:** Short term improved productivity from existing equipment. Long term utilisation of best available technology economically achievable. Stack 4A has 3x process input streams and consistently higher emission levels than stack 4B and more frequent transient elevated emissions. The input streams are: • Cooler Bag Filter • Electrostatic Precipitator (ESP) from 4A raw mill • ESP from the bypass tower Each of these streams is considered in the scope of the stack emission review with learnings considered for stack 4B where applicable.	
13.1	Complete internal assessment including stack tests and confirm preferred short-term improvements. • Stack test of different process stream inputs into 4A stack (completed) • Review data from stack 4A and 4B to understand opportunities for improvement (completed by external consultant as part of options assessment) • New rappers for 4A ESP (devices to clean dust off the ESP fields) • Ensure inspections for studies in 13.3 are scoped and planned with expert oversight	Q4 24
13.2	Install short term improvements over 2025. • Install new rappers for 4A ESP – complete in major shutdown • Inspections to support long term studies - complete in the major shutdown	Q1 25
13.3	Initiate in 2024 study to assess alternate technology options and other equipment modifications for improving stack particulate emissions and assess for economically viable options. **Cooler Bag Filter** • Engage technology services for Redecam (manufacturer) bag filter installations • Consult Redecam and other site for improvement to bag installation and sealing methods to reduce bag leakage. • Bring Redecam installation engineer for Q1 2025 Bag Change • Develop improvement scope to resolve leakage issues **4A ESP and Bypass** • Review performance improvement opportunities with global experts and precipitator specialists to review and consider but not limited to; rapping, temperatures, flow distribution, interruptions, voltages and control. • Prepare recommendations for improvements • Conduct computational fluid dynamics (CFD) if recommended • Develop improvement scopes from investigations	Q2 25

NO.	PROJECT DESCRIPTION	TIME
13.4	Assess options from long term study and comparison with existing emissions, apply to stack 4B where applicable	Q2 25
13.5	Determine next steps for long term and communicate options. Assessment and timing of potential major changes to be considered following detailed review, including stack 4B as required.	Q4 25 2026-2027
14	***Improve overfill protection and increased dust collection in dry mix plant.*** **Opportunity:** Assess system and determine options to improve overfill protection and increased dust collection in dry mix plant. **Benefit:** Reduce emissions associated with silo filling	
14.1	Complete scoping of dust collection improvements	Q4 24
14.2	Finishing off overfill phase	Q1 25
14.3	Complete capex approval and procure materials for dust collection improvements	Q2 25
14.4	Dust collection install during 2026 major shutdown assuming capex is approved	Q1 26
15	***Improve dust emissions from slag transfer tower.*** **Opportunity:** Design and install structure to fully enclose slag transfer tower roof, connecting into existing dust collector. **Benefit:** Improved dust control on transfer system	
15.1	Scope materials and initiate capital approval	Q2 25
15.2	Procure materials	Q3 25
15.3	Install during 2026 major shutdown	Q1 26
16	**Reduce fugitive dust from additive materials management area structure.** **Opportunity:** Design and install improvements to further enclose materials management area structure. **Benefit:** Reduce dust emission for tipping off raw materials around the existing structure.	
16.1	Revisit scope based on effectiveness of 2024 repairs	Q1 26
16.2	Scope materials and initiate capex approval	Q3 26
16.3	Procure materials	Q4 26
16.4	Install during major shut in 2027 or earlier if an opportunity arises	Q1 27
17	***Install additional wind curtains on east side of limestone stockpile.*** **Opportunity:** Install portable 6m high by 20 m long wind curtains at the working face of the eastern side of the limestone stockpile (shell block) **Benefit:** Reduce effect of wind on stockpile area	
17.1	Scope and order materials (up to 2 wind curtains depending on available space)	Q2 25

NO.	PROJECT DESCRIPTION	TIME
17.2	Prepare area, install and secure wind curtain(s) in desired location	Q4 25
18	***Install additional CCTV cameras to provide visual of key emission sources.*** **Opportunity:** Improve surveillance monitoring and recording of key dust sources across site. **Benefit:** Better visual of emission points and potential for engaging with new technology to check for dust	
18.1	Procure and install Q4 24 (complete) Confirm newly installed cameras are covering enough area and install more if required	Q4 24 Q1 25
19	***Improve monitoring network to measure larger particles across community and improve small particle reporting.*** **Opportunity:** Review monitoring network confirming location of additional or changed off-site and on-site monitoring locations and equipment to provide best practice monitoring of a range of particle size dust emissions. **Benefit:** Provide greater confidence in particulate emissions data and improve capability to monitor dust. Will require good community and stakeholder engagement to assist with facilitation of timely installation of permanent monitoring solution.	
19.1	Install short term solution (trailer mounted and dep plate). (complete)	Q4 24
19.2	Remove trailer mounted monitors – once permanent monitors installed	

19.3	Initiate comprehensive review of the monitoring network, include consideration as to dispersion footprint for depositional dust. (In progress)
	
	By early Q1 25 ABC will provide a report, summarising findings and recommendations following a comprehensive review of the current particulate monitoring network.
	
	Review to include:
	• Performance of existing monitors, annual TARP reviews, comparisons of modelled and measured data.
	• Capability of addressing community concerns about dust deposition
	• Make recommendations to improve monitoring network including:
	  ○ Monitor types
	  ○ Particulate sizes measured and air quality monitoring
	  ○ Relationship between suspended particulate and dust deposition
	  ○ Monitoring locations
	  ○ Meteorological monitoring data quality and location
	
	By early Q1 25 ABC will assess the suitability of utilising BAM (Beta Attenuation Methodology) to continuously measure PM2.5, PM10 and PM2.5/PM10 and TSP, following installation of temporary monitoring stations at the ABC Community Park and corner of Mary Street and Walton Street in Peterhead in September 2024.
		Q4 24

NO.	PROJECT DESCRIPTION	TIME
19.4	Provide and discuss proposed locations with EPA	Q1 25
19.5	Community consultation on locations • Communicate proposed monitoring locations with City of PAE and local community to agree preferred monitoring locations.	Q2 25
19.6	Preferred locations agreed by council and initiate capital approval subject to council and EPA approval of locations.	Q4 25
19.7	Procure equipment following capital approval.	Q1 26
19.8	Install equipment, commission with data to website	Q2 26
20	**Revise dust dashboard and update action responses, including predictive weather.** **Opportunity:** Improve dust dashboard trigger action response plan for routine dust management actions, integrating new monitors into the platform. **Benefit:** Better use of predictive weather assessment and reporting for community.	
20.1	Initial update of website with new trailer information (complete)	Q4 24
20.2	Scope changes to TARP and website based on agreed locations of new monitors in project 19.	Q2 25
20.3	Subject to development approval for preferred monitoring locations in project 19, ABC will obtain capital approval to upgrade the dust monitoring dashboard.	Q1 26
20.4	Complete the changes to the dust management dashboard and website	Q2 26
21	***Design and implement noise reduction options for kiln shell cooling fan.*** **Opportunity:** Design and implement noise reduction options for kiln shell cooling fan. **Benefit:** Reduce the largest noise source on site and thereby reducing overall site noise	
21.1	Assess options including extra noise/vibration mapping and noise monitoring throughout the night	Q2 25
21.2	Order materials if fan-based solution. Otherwise a comprehensive process review will be required and project steps revised.	Q3 25
21.3	Install equipment if fan-based solution and commission during 2026 major shut	Q1 26
21.4	Re-test noise levels following installation.	Q2 26
22	***Complete odour study of site and assess odour contributors.*** **Opportunity:** Complete study and consider options available for improvement. **Benefit:** Improved understanding of potential site odour sources and independent information available to community.	
22.1	Initiate odour study early in 2025. Study to include assessment of onsite and offsite odour sources and potential impact on community, report of findings and identified options for improvement.	Q1 25

No.	Project Description	Time
22.2	Review results from study and consider options. Assessment and timing of potential changes to be considered and communicated	Q4 25 2026-2027
23	**Plant additional trees to provide dust, noise, and amenity benefit to community.** **Opportunity:** Plant additional trees along Victoria Rd and other locations around site where vegetation gaps have formed or could be improved. **Benefit:** Assist with noise and dust reduction and improve amenity.	
23.1	Initiate additional tree planting around parts of fence line with vegetation gaps and in places to provide better shielding to community.	Q4 24
23.2	Plant in time for winter.	Q2 25

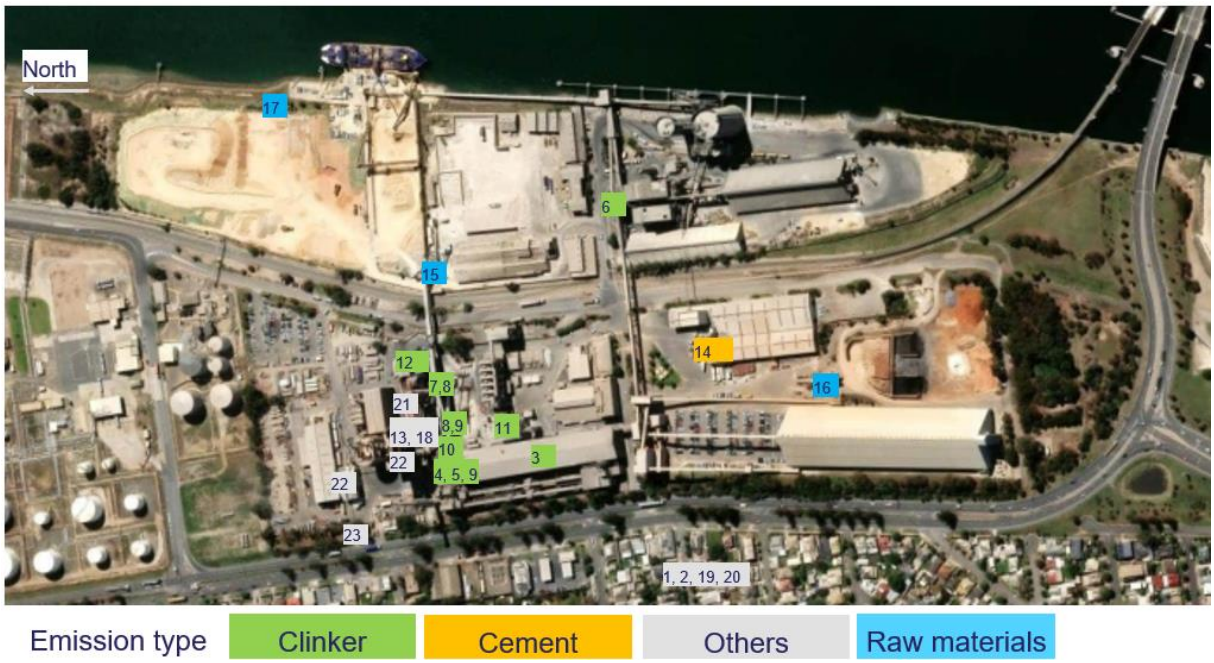

Figure 2: *Map of draft EIP projects, mapped to emission type.*

6 Development of the EIP

6.1 Development Overview

Generating the EIP report is a process which incorporates community consultation, expert advice, modelling, site knowledge and regulator expectations to firstly develop a preferred list of projects via the "options assessment" and secondly to present project timing in the final "Environmental Improvement Programme". As summarised in figure 3 the options assessment applies a feasibility rationale to the options and generates the draft EIP project list. The draft EIP project list is then developed into the EIP programme of works described in this document and makes up a set of compliance actions for implementation to an agreed timeframe.

Ideas generated for the options assessment, as informed by community, are grouped into community priority topics: dust, communication, monitoring, odour and noise. With a consultation group included following community feedback.

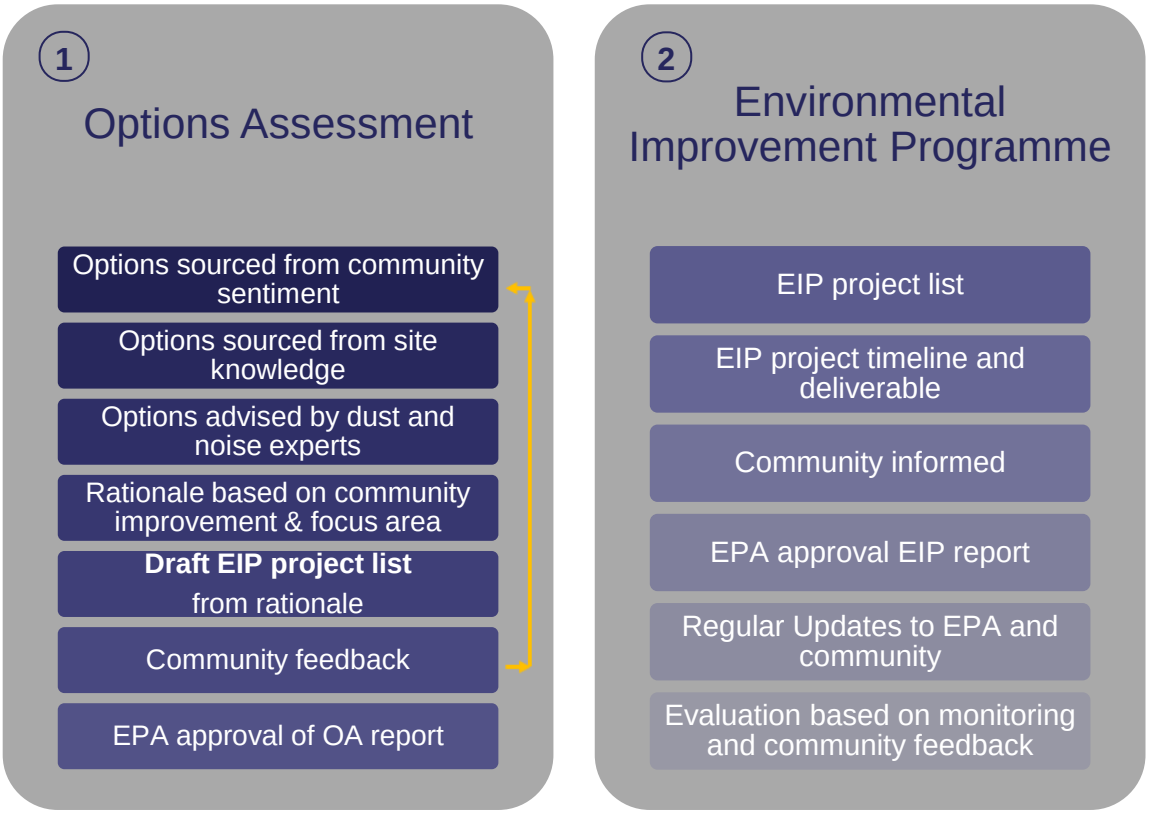

Figure 3: *OA and EIP development.*

6.2 Input from external consultants for EIP proejcts

Adbri has engaged air quality experts to re-evaluate options for air particulate emission improvement from a range of emission sources such as the dust collectors, clinker handling network, including the clinker shed, the stacks, raw materials and modelled dust sources. Options have been assessed via the rationale and brought across to the EIP for further development as explained in Table 2.

Adbri has also completed cross functional workshops which included the external consultant in developing recommendations and projects. Also, to undertake assessment of the dust collectors against best available technology (project 4 & 5), we have engaged independent consultant to complete additional emission monitoring testing on dust collectors and added this to previous testing, site logs and maintenance information.

Additionally, a noise consultant has been used to confirm the preferred options required to be brought across into the EIP project list.

Recommendations from options assessment consultant reports	Corresponding EIP project number
Dust collector improvements	4 & 5, 14
Clinker handling and storage and clinker shed,	3, 6-12
Stack 4A & 4B,	13
Other dust sources	15-20
Noise sources	21

***Table 2**: Recommendations from external consultants and corresponding EIP project.*

6.3 Feasibility and Rationale

The rationale is the method by which options are filtered into feasible projects by applying a ranking system. The ranking of projects has previously been reported throughout community consultation and in the options assessment. Feasibility assessment relates to objectively and rationally determining the practicality of a project and its capability to succeed. Adbri has taken on-board community sentiment in re-development of the rationale shown in Figure 3, strengthening community weighting to twice that of other categories including environmental improvement, ease of implementation, project value add (health & safety, efficiency, CO2 reduction) and project cost.

Rationale for Draft 2 EIP by emission inventory model (Sep)

	Category	Score = 1	Score = 5	Score = 10
a)	Environment improvement	Low	Medium	High
b)	Community focus area	General dust ad-hoc,	Clinker & cement dust ad-hoc, General dust, odour, noise	Clinker dust baseline, communication, monitoring
c)	Ease of implementation	Complex (requires significant engineering and driver for major shut)	Moderate (requires minor shut resources)	Easy (use on-site resources & down days)
d)	Project value add (H&S, efficiency, CO2 reduction)	Maybe	Probably	Very likely
e)	Project cost	High >$5m	Moderate <$5m	Minor <$0.5m

Double weighting on community criteria

Ranking = a + b*2 + c + d + e
Max rank = 60 Preferred cutoff = 35

Figure 4: *Rationale for project feasibility.*

6.4 Benefit and Measure of Success

Projects have an improvement pathway through which we can measure and assess individual project benefit, and subsequently their contribution to the overall EIP success in terms of improving environmental and community outcomes.

Individual project benefit is measured by; dust containment, dust reduction, early warning, technology & general.

6.5 Intended Timeframe

Intended timeframe for each project is shown by utilising Adbri project framework; initiate, selection, development, execution, delivering. Quarterly timing is provided in Figure 1 – summary of intent, with additional detail given in the Section 5.

6.6 Final EIP List

Following selection via the rationale and community consultation, the EIP projects are further detailed with actions, timeframes and milestones to be undertaken by the site to implement improvement projects as explained in Section 5.

6.7 Assessment of effectiveness

Overall EIP programme effectiveness is intended to be measured by

- Reduced emissions monitored in-process

- Reduced depositional dust through monitoring
- Reduced complaints (through community feedback).
- Where appropriate, modelling may also be used.

6.8 Reporting of progress

Quarterly reporting

A quarterly report will be prepared detailing progress and completion of the EIP actions during the quarter.

A quarterly report will include where applicable:

- Details of steps taken to progress compliance actions
- Details of proposed next steps to be taken in the following quarter

A quarterly report will be submitted to the EPA within 45 days of the end of each calendar quarter.

Annual reporting

An annual report will include:

- A summary of EIP actions completed during the calendar year
- A summary of progress on EIP actions

An annual report will be submitted to the EPA within 45 days of the end of the calendar year.

Public Access

A copy of the current version of this EIP, as approved by the EPA, will be made available on the Adelaide Brighton Community website.

Following submission of the quarterly and annual EIP reports to the EPA, the reports will be made available on the Adelaide Brighton Community website.

Appendix A – Community Consultation Report

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The detailed community consultation report will be provided with the final document and include the feedback from the CLG and drop in sessions on the 14th and 15th October respectively.