

### NSW Carbon Recycling and Abatement Fund Project Pathways To Maximise Stored Coal Combustion Products

Partnership between NSW Government (EPA) and Ash Development Association of Australia

W South / C. Heidrich

Valkokivi Pty Ltd / ADAA

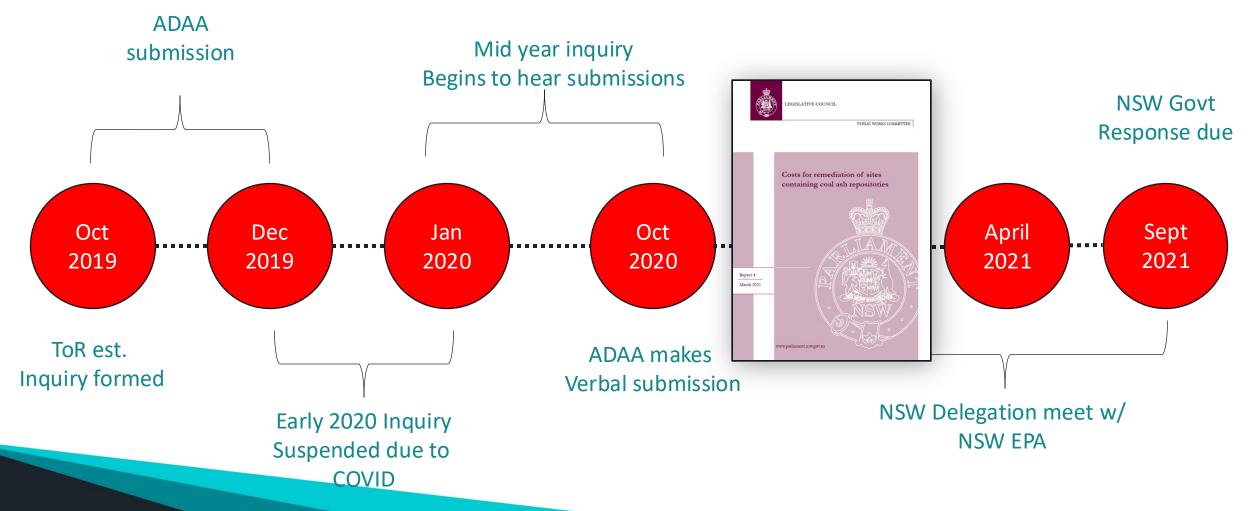


#### CRAF – Project Objective

- To support innovative circular economy approaches that manage waste and materials more efficiently and effectively and assist in reducing carbon emissions.
- To gain a better understanding of coal combustion product repository supply, applications, and technologies to explore the potential for future use as coal-fired power stations are decommissioned.
- To leverage industry experience and knowledge to ensure project outputs are fit-for-purpose and will unlock genuine supply chain barriers, considering health and environmental risks.

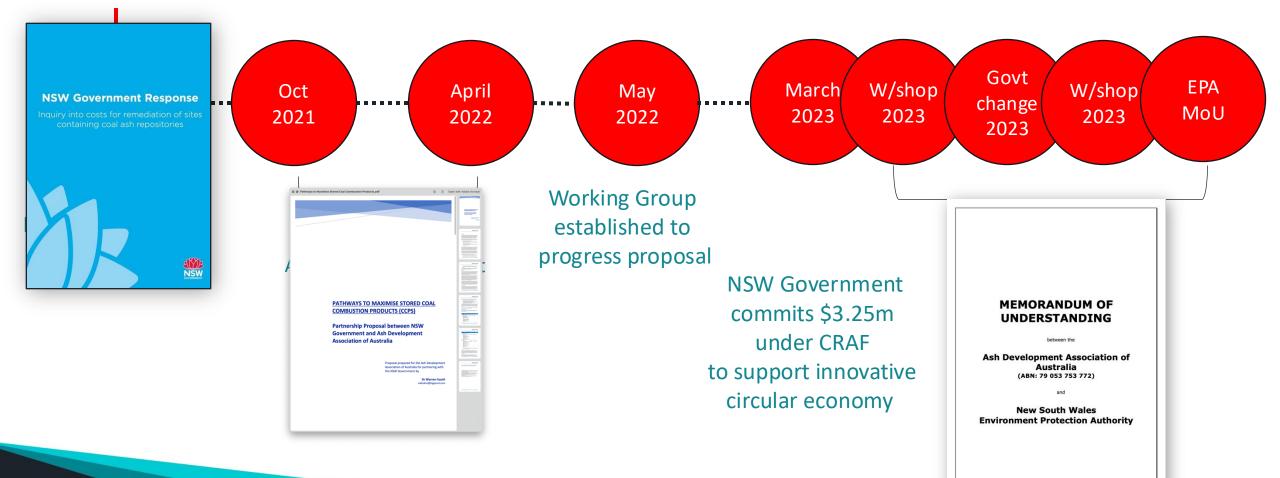


### Inquiry into ash repositories - timeline



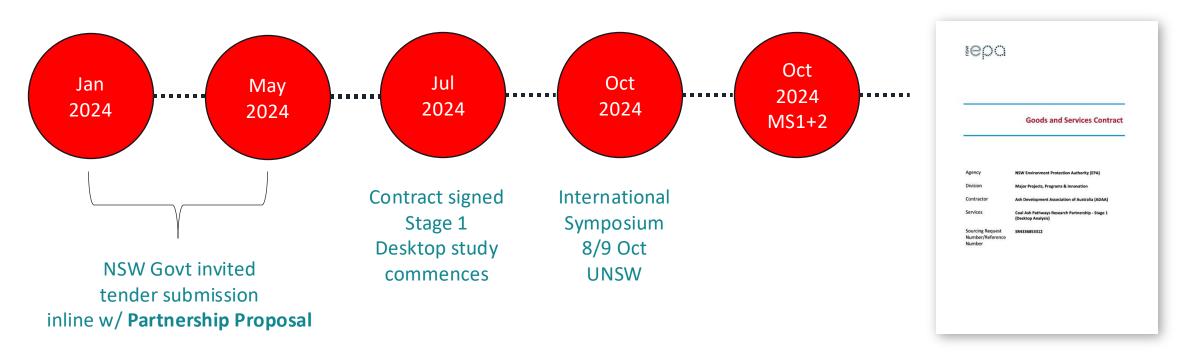


### Post - Inquiry into ash repositories





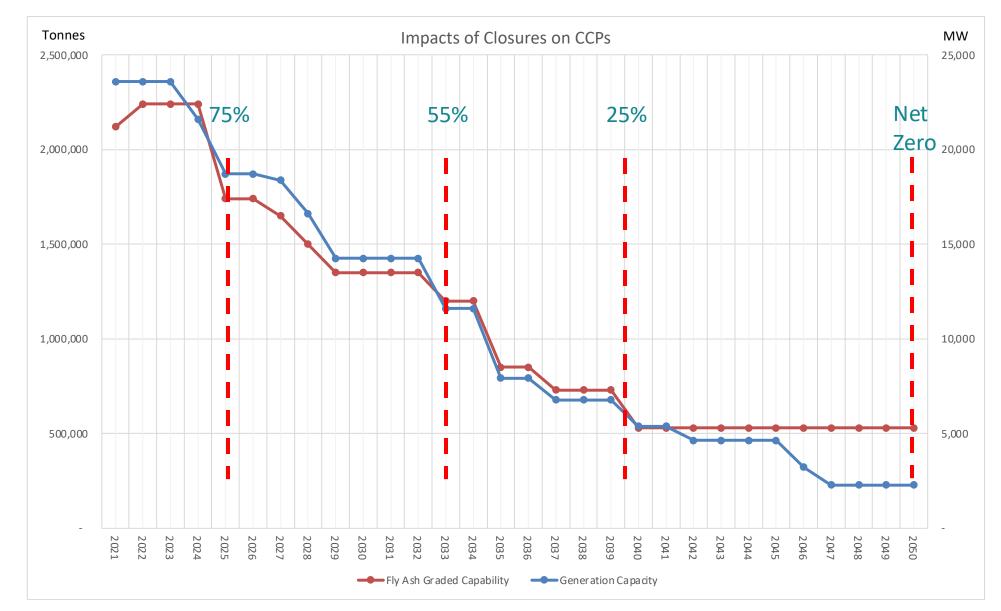
### Post - Inquiry into ash repositories





### Problem statement

Can harvesting of CCPS (fly ash) from coal ash repositories be a major innovation area for the reduction in carbon emissions in NSW cement and concrete sector as CFPS retire from service?



Source: AEMO 2021, Draft 2022 Integrated System Plan + ADAA Member Survey data



Ash Development Association of Australia

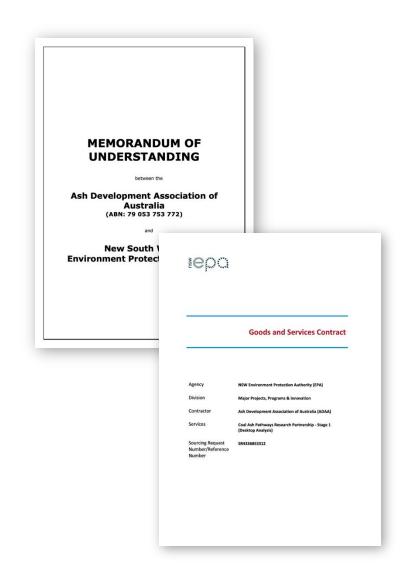
## CRAF Project Update

#### Pathways To Maximise Stored Coal Combustion Products



### Partnership

- NSW Government has allocated \$3.25 million Carbon Recycling and Abatement Fund to support innovative circular economy approaches that manage CCPs more efficiently and reduce emissions
- Phase 1 Stage 1 Investigate, characterize (CCP) resources in storage
  - Current and predicted resources, Desktop characterize stored resources (Workshop, Int'ls + tech road map) \$260k
  - International Symposium \$20k (Sponsorship)
- Phase 1 Stage 2
  - Potential future opportunities (Site investigations x 3 @ ~\$300k) harvesting protocols), and
  - Pathways to enable utilization \$2m Phase 2 Exploit existing pathways + Phase 3 Est. Pilot Projects to assess and demonstrate viability of new industries (jobs)
- \$300k Updating material specifications + Reporting (data)





### **Expected Outcomes**

- an informed position on the exploitation of coal ash repositories in New South Wales
- a library of physical and chemical data of the resource, sufficient to allow interested stakeholders to determine the viability of developing the resource, as well as inform future processing options
- it will support any regulatory changes required to facilitate optimum usage of the identified resource.



### Project Plan – Establish known information

Pathways to Maximise Stored Coal Combustion Products (CCPs)																									
Phase 1: Establish known information (Stage 1)																									
										2	2024											2025			
				02				03							04							01			
				JUN	_	JUL		AUG		-	SEP	_	OCT		vov	DE	EC		JAN			FEB		MAI	NR .
1 - Project Management/Design	START	END	Week 1 Week 2	Week 3 Week 4	Week 1	Week 2 Week 3	Week 4 Week 1	Week 2 Week	ak 3 Week 4	Week 1 Week 2		Week 1	Week 2 Week 3 Week 4	Week 1 Week 2	Week 3	Week 4 Week 1 Week 2	Week 3 We	ek 4 Week 1	Week 2 Wee	ek 3 Week 4	Week 1	Week 2 Week 3	Week 4 We	eek 1 Week 2	Week 3 W
Following contract commencement, the successful applicant will be required to																									
1.1 Establish project team	1/6/2021	12/7/2024																							
1.2 Develop a project plan with agreed upon timeframes for key deliverables/milestones.	1/6/2021	12/7/2024																							
1.3 Attend regular meetings with the EPA to provide project updates within an agreed upon frequency to monitor progress towards deliverables.	1/6/2021	30/3/2025	× i			×					x			x		×							x		
1.4 Prepare and deliver reports, updates and objectives upon an agreed schedule of services.	1/6/2021	20/2/2025																							
3.4 repare and beneer reports, updates and objectives upon an agreed schedule of services.	1/6/2021	30/3/2025	_			x								x		*							x		
2. CO Cambra Chuide																									
CCP Scoping Study     Critcal decision-making element study to include current end-of-life market opportunities for CCP's, current CCP stock, and projections for future					_																				
Critical decision-making element study to include current end-ot-line market opportunities for CLP's, current CLP stock, and projections for future demand, which may include																									
			_									/													
2.1 Current state of coal ash resources in Australia and any impacts of increasing supply to the market	1/7/2024	22/7/2024																							
2.2 Current and future supply and demand for CCP's in NSW	15/7/2024	5/8/2024																							
2.3 Current CCP utilisation and alternative product comparison	5/8/2024	19/8/2024																							
2.4 Summarised site information	22/7/2024	5/8/2024																							
2.5 Knowledge gaps and market barriers	5/9/2024	10/10/2024																							
2.6 Interjurisdictional (State) review of Regs/ Acts/ Approvals etc.	19/8/2024	9/9/2024																							
2.7 End markets for COP's and their alignment with the existing coal ash RRO/RRE	9/9/2024	30/9/2024																							
53 - Stakeholder Mapping																									
The development of a stakeholder map to identify all stakeholders is required, accompanied by a stakeholder engagement and communications																									
plan to outline how relationships with all parties will be maintained during the project delivery. Identify and engage industry entities and regulatory																									
enablers, which may include:																									
3.1 Power station owners	1/7/2024	22/7/2024																							
3.2 Suppliers/processors	8/7/2024	29/7/2024																							
3.3 Users/customers	29/7/2024	19/8/2024																							
3.4 Specifiers	12/8/2024	2/9/2024																							
3.5 State Government	2/9/2024	23/9/2024																							
3.6 Local Government	9/9/2024	30/9/2024																							
3.7 Stakeholder engagement and communications plan	1/2/2024	22/0/2024																							
an tesenyoer enfinitest and resultances here	2/1/2024	#3/3/ KVAN	-																						
5 4 - Desk Top Analysis																		N							
Complete a desk top analysis of all CCP information held by government, industry, and other stakeholders, this should include																									
4.1 Identifying information brokers	1/10/2024	22/10/2024			-							L													
4.2 Addressing any (commercial) confidentiality or access issues	14/10/2024	4/11/2024			-													-							
	14/10/2024	4/11/2024																							
Reviewing and collating all relevant information held by industry relating to current and legacy coal ash repositories including studies and																									
4.3 current/historic maps 4.4 Reviewing and collating any relevant information relating to current and legacy ash repositories studies and current/historic maps	28/10/2024 11/11/2024	18/11/2024 23/12/2024																							
4.5 Desk top analysis should include but is not limited to the review of documents listed in Part F - Background Documents for Review	14/10/2024	11/11/2024										_													
55 - Collate End Use Criteria																									
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Review and collate the below end use criteria for CLP's to identify alignment/misalignment and create a summary of relevant standards to support the beneficial reuse of CCP's.																									
5.1 Australian codes and standards	1/10/2024	22/10/2024																7							
	22/10/2024	12/11/2024			-																				
5.2 International codes and standards					-							-													
5.3 Industry specific requirements (e.g. concrete products) 5.4 NSW recovery orders and exemptions	12/11/2024 3/12/2024	3/12/2024 24/12/2024			-							-													
or now recovery overa and exemplititis	3/ 12/ 2024	24/12/2024			-							-													
56 - Final Report																									
Deliver a final report including all the information outlined above, with the below sub sections as a minimum					-																				
Deriver a final report including all the information outlined above, with the below sub sections as a minimum 6.1 Abstract	1/1/2025	22/1/2025			-																1		1		
6.2 Project objectives	13/1/2025	3/2/2025			-										1										
6.3 CCP Background Information					-							-													
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6.5 Stakeholder mapping	27/1/2025																								
	3/2/2025 10/2/2025	24/2/2025 3/3/2025			-							-			+										
6.7 Scoping study												-			+						-				
6.8 End of life criteria	17/2/2025	10/3/2025																			-		1		
6.9 GIS mapping including separate base layers for data sets (OPTIONAL)	- /- /	an in inne			-																-		-		-
6.1 Recommendations for next steps	3/3/2025	31/3/2025																							
57 - Best Practice Symposium																					-				
2/ - Ossi Practice Symposium	4/0/2024	4/0/2021			_									/							-				
7.1 Co-ordinate symposium agenda/ WG	1/6/2024	1/9/2024				×			×			x													
	1/6/2024	30/6/2024																							
7.2 Venue		30/7/2024																							
7.2 Venue 7.3 Sponsorships	1/7/2024																								
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7.2 Verue 7.2 Spennersher 7.4 Taget initiations / Int'l & Australian	1/7/2024	30/7/2024				×	×			×	×														



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MS2 - CC	P Scoping Study		
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MS3 - St	akeholder Mapping		
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3.6	Local Government	9/9/2024	9/10/2024
3.7	Stakeholder engagement and communications plan	1/7/2024	18/10/2024



Ash Development Association of Australia

# Thank you