
To:	LITHGOW CITY COUNCIL
Date:	16 MAY 2018
From:	Ben Eastwood (NSW Environment Leader)
Subject:	Wallerawang Power Station: Progressive Capping Strategy - briefing note

Background

- EnergyAustralia has been undertaking Decommissioning, Demolition and Repurposing (DDR) works at the Wallerawang power station since its closure in 2014.
- This includes the planning for the closure and rehabilitation of the Wallerawang ash repositories known as Kerosene Vale Ash Repository (KVAR) and Sawyers Swamp Creek Ash Dam (SSCAD). The Wallerawang ash repositories cover approximately 150 ha of land and represent one of the biggest environmental liabilities in the Lithgow Shire. The purpose of this project is to enable the best management of these environmental liabilities.
- A shortfall of capping material to stabilise the Wallerawang ash repositories has been identified in the order of 2.3 million tonnes. This material is not available at the Wallerawang Power Station site.
- Suitable capping material is available from Sydney infrastructure projects (Westconnex & Northconnex) for a limited time, which would meet this shortfall and support the closure and rehabilitation of the Wallerawang ash repositories.
- The current Westconnex Project is scheduled for completion by November 2018 and has material that would be suitable for capping the Wallerawang Ash Repositories.
- EnergyAustralia submitted a Project Application to the NSW Department of Planning in January 2018 to import suitable material to cap the Wallerawang Ash Repositories. The Supporting Environmental Assessment has been placed on public exhibition from 23 March 2018 to 9 April 2018 inclusive at the Lithgow City Council Chambers.
- Six submissions were received from Government agencies, two from local Government agencies (LCC & BMCC) and one submission from the Blue Mountains Conservation Society. There were no submissions from individuals or groups in the Lithgow LGA opposing the Project.

Existing Approvals

- The SSCAD was approved and constructed in the late 1970's and pre-dates the NSW *Environmental Planning and Assessment Act 1979*. SSCAD is a prescribed dam listed under schedule 1 of the *Dams Safety Act 1978*.
- KVAR operates in accordance with Project Approval 07_0005 granted by the then Minister for Planning on 26 November 2008 under Part 3A of the *NSW Environmental Planning and Assessment Act 1979*. Progressive capping and rehabilitation is an approved activity under the current Project Approval.
- EnergyAustralia NSW is authorised to source and use ENM and VENM from the Lithgow and Bathurst Local Government Areas under its existing Environmental Protection licence 766. Unfortunately, there is insufficient volume available, at this time, from these LGA's. We understand Council too have had to source material externally for landfill capping.

Case Study - Sydney Infrastructure Projects (WestConnex and NorthConnex)

The WestConnex Project will:

- Extend the M4 in twin underground tunnels between Homebush and Haberfield.
- Will build new M5 tunnels to double capacity between St Peters and Kingsgrove.
- Join these underground routes together via the M4–M5 Link tunnel.
- Provide a western bypass of the Sydney CBD and provide connections to the future Western Harbour Tunnel, Beaches Link and F6 extension.

The NorthConnex project was approved by the NSW Minister for Planning on 13 January 2015 and tunnelling started in April 2016. The project will be complete in late 2019. About 21 kilometres of tunnelling is being carried out for NorthConnex. The two main nine-kilometre tunnels will carry motorists between the M1 Pacific Motorway and the Hills M2 Motorway and additional tunnels are being excavated for on and off ramps.

	Status Complete as at May 2018	Remaining ENM/VENM approved for Disposal as at May 2018	Completion Date (material available)
WestConnex			
M4 Widening	100%	0	n/a
King Georges Rd Interchange Upgrade	100%	0	n/a
M4 East	75%	2.4 mil m ³	Nov 18
New M5	55%	3.3 mil m ³	Nov 19
M4-M5 Link	35%	4.0 mil m ³	Oct 22
NorthConnex			
Tunnel, M1 Pacific Motorway Widening	22%	2.3 mil m ³	Dec 19

- ENM and VENM from the WestConnex and NorthConnex Projects is transported via 32-ton road registered truck and dog vehicles. Rail connection is not provided.
- The WestConnex Project has four locations where ENM and VENM is collected for transport and disposal. These collection points are located along the WestConnex corridor in the suburbs of St Peters, Arncliffe, Bexley and Kingsgrove.
- Up to 200 trucks are currently removing ENM and VENM from the WestConnex Project for disposal at receiving facilities throughout the broader Sydney metropolitan area.
- Material is subsidised by the WestConnex and NorthConnex Projects to cover the cost of loading and transport of material by road.
- It is understood that ENM and VENM is being used in new residential areas primarily in Western Sydney.
- The Lithgow City Council has recently used ENM and VENM from the WestConnex Project for a short period of time, with up to 60 truckloads per day maximum. The ENM and VENM has been used in landfill and to cap existing waste facilities in the Lithgow Local Government Area.

Material Quality

The quality of material proposed to be used for capping purposes will be limited to ENM and VENM. These materials are defined under the NSW EPA Waste Classification Guideline dated 2014, and are essentially excavated natural materials.

Excavated Natural Material (ENM) is classified in accordance with the NSW EPA Excavated Natural Material Order 2014 and can be applied to land in accordance with the NSW EPA Excavated Natural Material Exemption 2014. Resource recovery orders and exemptions minimise the quantity of material entering landfills and encourage the reuse and recycling of material at other sites.

Virgin Excavated Natural Material (VENM) is defined in the Protection of the *Environment Operations Act 1997* as “natural material (such as clay, gravel, sand, soil or rock fines) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities.

Material Classification

The use of ENM and VENM is subject to strict monitoring and tracking requirements outlined under the EPA Waste Classification Guideline. The supplier of ENM and VENM is required to analyse the material to confirm it meets the relevant criteria under the EPA Waste Classification Guideline. This is typically carried out by independent third-party soil and land contamination specialists which prepare a report to confirm the material meets the ENM or VENM criteria. Testing is required to be repeated every 10,000 ton to confirm the material continues to meet the ENM or VENM criteria.

Vehicle Monitoring and security

Following the testing of the material to confirm it meets the ENM or VENM criteria the material is tracked by load from its point of origin to its final destination. The producer (e.g. WestConnex) and receiver of the material (EnergyAustralia NSW) is responsible for recording and tracking each truck load of material that is delivered. This is achieved by using reputable licenced contractors, detailed tracking forms that confirm the materials origin, how and by whom it was transported and where it was deposited. Each step in the process is required to be signed by the relevant responsible person. This allows for a very transparent and trackable transport process. In addition to this, online GPS tracking units will be fitted to vehicles where practicable

An advantage that the Capping Project has at the Wallerawang Power Station is that the site has a single point of access and 24hr security. The Wallerawang ash repositories are not accessible by the public. As such each load coming into the site can be closely monitored and recorded.

In addition, EnergyAustralia NSW would implement additional material sampling and analysis to ensure delivered material was consistent with the quality outlined in the reports provided by the supplier.

Project Description (volume, duration, truck numbers)

The Project comprises the following key components:

- Sourcing suitable capping material from any available location in NSW.
- Using only material classified as Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) as defined by the EPA Waste Classification Guideline dated 2014.
- Up to a maximum of 100 loads per day would be transported along the Great Western Highway and Castlereagh Highways.
- EnergyAustralia NSW proposes to reduce the number of truck loads from the original 150 as proposed in its application down to a maximum number of 100 truckloads per day. On average, it is likely that 70 loads would be achieved over an extended period.
- Access to the Ash Repositories would be via the existing heavy vehicle access point on the Castlereagh Highway into the Wallerawang Power Station.
- No Council roads would be used to transport material coming from the Sydney infrastructure Projects. Roads and Maritime Services have been supportive of this initiative.
- The Project is likely to take 12-18 months, depending on availability of material, truck numbers and proposed capping depth.
- Local trucks and haulage transports will be utilised where possible to create local employment opportunities.
- The variation of the Project volume, duration and truck loads is summarised in **Table 1**.

• **Table 1: Indicative Capping volume**

	300 mm capping thickness	500 mm capping thickness	750 mm capping thickness
Kerosene Vale Ash Emplacement (m ³)	180,000	300,000	450,000
Sawyer Swamp Creek Ash Dam (m ³)	540,000	550,000	720,000
Totals (m ³)	720,000	850,000	1,170,000
Total (tonnes)	1,400,000	1,600,000	2,200,000
Days haulage	440	500	690
Years haulage	1.2	1.4	1.9

*assumes 32-ton truck and dog capacity

** assumes 100 trucks per day (incl. weekends)

The Project is dependent on a number of variables, these include:

- Access to and availability of bulk ENM and VENM from the Sydney based infrastructure Projects. The material from Sydney is not guaranteed and EnergyAustralia does not have exclusive access to the ENM and VENM from these Projects.
- Availability of trucks to transport the material. A reduced number of trucks will increase the duration of the Project.
- Weather conditions, as wet days will delay loading trucks at the designated loading bays in Sydney.

- Expectations of capping depth by regulators and the community. An increased capping depth will increase the volume of material required and duration of the Project to meet these expectations.

Rail Transport

EnergyAustralia NSW has considered a number of alternative options to the Project including sourcing material locally and using rail. The LCC in its submission requested that rail be considered as the preferred mode of transport of capping material for the Project. Some of the positives and negatives of rail transport are outlined in **Table 2**.

Table 2 Positives and negatives of transporting capping material by rail.

Positives of rail transport	Negatives of rail transport
<ul style="list-style-type: none"> • Rail would provide for the bulk haulage of capping material. 	<ul style="list-style-type: none"> • Would require higher capital investment to construct suitable infrastructure to accommodate the delivery of a large volume of material.
<ul style="list-style-type: none"> • Trucks would not have to pass through the Blue Mountains City Council Local Government Area. Trucks would still be required to operate in the Lithgow LGA. 	<ul style="list-style-type: none"> • Required infrastructure to be constructed would include: <ul style="list-style-type: none"> ○ A rail unloader facility; ○ Material handling plant and storage area; ○ Upgrades to local roads and intersections as required
<ul style="list-style-type: none"> • Impacts from trucks movements on the Great Western Highway and Castlereagh Highways would be reduced. Reduced impacts would include: <ul style="list-style-type: none"> ○ Less maintenance costs; and ○ Reduced traffic congestion. 	<ul style="list-style-type: none"> • Preliminary assessments indicate that the subsidies provided by the WestConnex Project would not cover the cost of transporting the material by rail as it does for road transport
	<ul style="list-style-type: none"> • Specialist rail logistics coordinators would be required to manage rail transport arrangements and access.
	<ul style="list-style-type: none"> • Trucks would be required to transport material from the unloader facility to the ash repository in the Lithgow Local Government Area.
	<ul style="list-style-type: none"> • Upgrades to local roads and intersections would be required to accommodate the increased truck movements in the Lithgow Local Government Area.
	<ul style="list-style-type: none"> • An increase in truck movements would be required for short periods on a campaign basis when material was available.
	<ul style="list-style-type: none"> • EnergyAustralia NSW does not have access to rail network capacity for the transport of this material on the Blue Mountains Line.

	This would take time and delay access to the material which is available now.
	<ul style="list-style-type: none"> There is no certainty on the availability of the capping material as EnergyAustralia NSW does not have exclusive access to it. Using trains would require certainty on the material being available when required.
	<ul style="list-style-type: none"> It is more economically efficient to transport the material by truck than rail based on the approval conditions of the WestConnex project.
	<ul style="list-style-type: none"> Rail loading and unloading in Sydney and locally will cause two sets of truck movements at either ends of the projects.

Conclusion

EnergyAustralia NSW is seeking the support of LCC and councillors to ensure the Wallerawang Ash Repositories can be capped and rehabilitated to provide for an improved environmental outcome for the Lithgow LGA. We believe we have a unique opportunity to create a beneficial reuse of material and develop an environmental improvement for the area.

Figure 1

