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Billions on the line in NSW's central west

By Samantha Bawden, Journalist

NSW's north-west corridor is economically critical, and mining is the region's backbone.

Stretching across Orana and the central-west, the corridor spans 23 local government areas and key regional centres including Dubbo, Mudgee, Parkes, Bathurst and Orange – communities where mining underpins employment, contracts and local spend.

Fresh data now puts a hard number on that contribution.

The NSW Minerals Council's latest annual expenditure survey reports record mining employment and near-record direct spending across the state.

In FY25, participating mining companies supported more than 35,100 full-time equivalent jobs, up almost 160 jobs on the previous year and the highest level recorded in the survey's history.

The metals mining sector alone delivered \$2.6b in direct spending, supported 9000+ jobs and returned about \$300m in royalties and other taxes to the NSW Government.

Mining is already carrying the numbers. The question now is whether policy helps or hinders the region's future.

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An African ascension

By Samantha Bawden, Journalist

Africa is one of the world's most dynamic mining frontiers. And one of the most contested.

The continent is widely estimated to hold about 30% of the world's mineral reserves, spanning gold, base metals and critical minerals.

It is a potential engine for diversification, industrialisation and sustainable growth. But

questions around regulatory uncertainty and political complexity remain.

For many Australian companies, the opportunity is already real. A growing cohort of ASX-listed resource companies are hitting paydirt across the continent – all while maintaining Australian governance standards.

Over the last two decades, private-sector activity in many markets has accelerated, in

some cases outpacing Australia's broader institutional engagement.

Australia's current commercial mining footprint in Africa includes about 170 ASX-listed companies operating across some 35 countries, with current and potential investment in exploration, extraction and processing estimated at more than \$40b, according to an Australian parliamentary inquiry.

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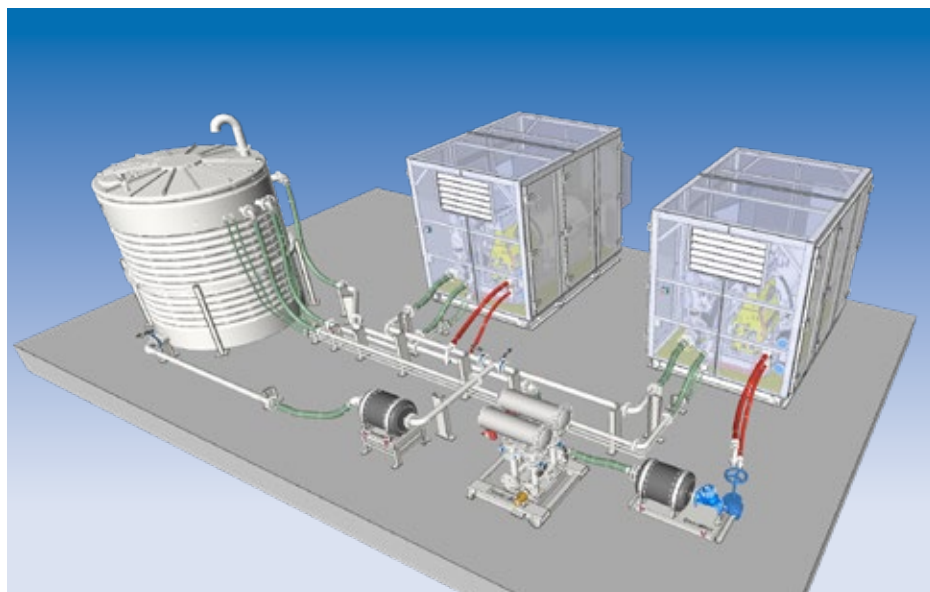


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EnviroMist expands its dust suppression capabilities



EnviroMist started in Australia in 2009 with the goal of designing and supplying dust suppression equipment to the Australian mining industry.

Research has shown that effective dust suppression from sprays occurs when the water droplet size is similar to the airborne dust particle size. Based on this evidence, EnviroMist developed sprays that atomised water droplets to more efficiently capture dust particles.

EnviroMist's original nozzle design utilised compressed air to atomise water droplet size which was effective but had two detractions – firstly it required compressed air to be available which increased design complexity and secondly whilst the droplet size was small, the resultant spray from the nozzle was easily affected by crosswinds which would blow the spray away from its intended dust target meaning the technology could only be effectively used in enclosed locations.

When EnviroMist was approached to design a dust suppression system for a ROM bin in a Queensland coal mine its designers knew that compressed air spray nozzles would be ineffective as truck dumping operations generated significant wind flows from air entrained within the dumping material stream and also encountered environmental cross winds.

The problem was solved by developing a new spray nozzle and spray bar design which did not require compressed air and instead utilised a double venturi effect to suck air into the water resulting in atomised water droplets.

Projection of the resultant spray was achieved by increasing the water pressure to the point where the spray stream was able to resist the air flow generated during dumping operations, keeping the dust within the ROM bin and allowing the billions of water droplets to capture the dust generated in dumping operations.

Whilst the spray out the nozzles looked as though it used a lot of water, the average droplet diameter was only a nominal 40 micron and therefore the actual water consumption was far less than the previously installed spray system which used standard nozzles and spray bars.

Measurement of flow rates determined actual water consumption dropped from 1000L/min down to 380L/min for the EnviroMist system. Timing systems installed on the start and stopping of the sprays meant that the sprays only operated for around 40 seconds per truck, or around 250L of waters consumed.

EnviroMist had effectively designed a system that both suppressed ROM dust and reduced blockages in downstream materials handling feeders and conveyors which were occurring due to high ore moisture levels.

Driving innovation and continual improvement

EnviroMist's design was studied by a University of Wollongong PhD candidate who measured water droplet size of different EnviroMist nozzles at varying water pressures and developed computer models which verified the effectiveness of the dust suppression capabilities of EnviroMist sprays.

EnviroMist has since continued to expand its spray bar designs, developing new spray bars and spray heads to resolve other difficult dust suppression scenarios.

One example is that EnviroMist have produced a spray design for COS stackers by developing a new spray head with cluster nozzles designed for pressures up to 200 bar. This spray head can project mist streams up to 30m which allows EnviroMist to hit and penetrate falling material streams in significant cross winds with spray heads positioned up to 8m from the material stream.

EnviroMist has developed sprays for

underground continuous miners, longwall shearers and chocks, drill rigs, bulk stage loader transfer points, apron feeders, rotary car dumpers and standard conveyor transfer points using the principles of atomised water droplets.

Trusted by Tier 1 miners

EnviroMist has worked on projects for many Tier 1 mining houses such as BHPBIO, RTIO, BMA, AngloAmerican and many other clients both in Australia and overseas. The company has specialised engineering and fabrication partners who can design and fabricate fully automated dust suppression systems which track relevant process parameters such as pressures, temperatures and flows for spray systems with pressures up to 3000psi (206 bar).

Systems are delivered with installation, operating and maintenance manuals, spares lists, maintenance guidelines and carry full customer support guarantees after delivery.

As an ISO9000 certified company EnviroMist's quality process are designed to meet Australian standards and clients requirements at a minimum enabling full tracking of design development, materials, fabrication, procurement, transport, commissioning and handover of dust suppression solutions

Dust reduction proved by independent testing

An example of the effectiveness of EnviroMist's dust suppression solutions was seen when one underground coal mine tested their air quality with all of its standard spray systems operating as designed and found that 10 of the 20 areas tested by an independent NATA qualified technician had dust levels exceeding safe levels of respirable coal dust and/or respirable quartz dust.

EnviroMist was engaged to design, supply and commission a new spray system for the same areas (longwall, BSL and others).

Follow up testing by the same technician in the same locations found zero dust level exceedances with EnviroMist sprays operating.

At a Queensland mine, EnviroMist were commissioned to install a dust suppression system around the ROM bin, feeders, crushers and transfers. The ROM was found to have respiratory dust levels in excess of the legislative requirements and was five times in excess of the 2mg/m3 mass average allowable limit.

Following the introduction of EnviroMist's Dust Suppression system the dust levels were reduced to within legislative compliance. Testing confirming a reduction in total dust particle mass from 10mg/m3 to 2mg/m3.

In addition, the reduction in air borne dust saw a marked reduction in cleaning with a further benefit of keeping the dust entrained in the product stream where it can be processed.

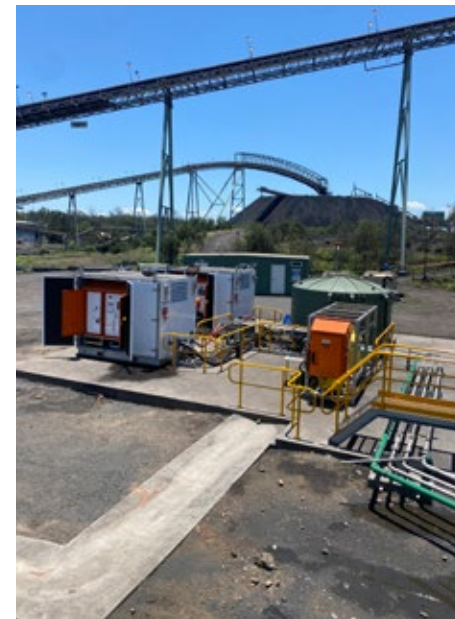
Recent challenges – hard water and high saline water solutions

Recent challenges at some sites have led EnviroMist to integrate water treatment technologies which enable our systems to operate in mines with very hard or high saline water conditions.

Preliminary tests have shown a non-dosing water treatment for very hard water at a mine has proven to reduce calcium build up within pipes and therefore EnviroMist expects this treatment to reduce system maintenance.

EnviroMist is close to commissioning three new systems designed with water treatment integrated from initial design and will monitor the results as the systems operate.

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