

# ATMOS GLOBAL

A JOURNEY TO INSPIRE AND  
DISCOVER EXCELLENCE





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*ATMOS Global's new VerifiedDust platform is a journey in the pursuit and discovery of environmental excellence, says its global president and CEO Dr Orestis Valianatos*

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As dust management and dust control activities become more complex in the fast-paced technological environment of the mining industry, it is important for mine site operators to have access to practical evidence-based knowledge and information that enhances their ability to select strategically important clusters of dust management methods for their active or proposed mining operations.

Headquartered in Melbourne, Australia, ATMOS Global™ (ATMOS Australia Pty Ltd) is a wholly Australian-owned global consulting company specialising in advanced dust impact forecasting, dust management and dust control. The company has built a strong brand identity from its work with a wide range of businesses across a broad range of industries to accurately assess complex air quality risks associated with their operations, increase the efficiency of the recommended risk mitigation measures, and improve their environmental strategy and communications.

ATMOS Global's clients include large multinational blue chip companies and emerging companies, as well as government regulatory agencies. The company has been developing and pioneering advanced three dimensional (3D) numerical weather prediction and complex air quality modelling, forecasting and management tools for almost two decades. Embracing innovation to advance scientific and technical research, ATMOS Global maintains a forward-looking philosophy by exploring emerging issues of importance to the air quality and business





Dr Orestis Valianatos, CEO, ATMOS Global

## DUSTPACK

ATMOS Global's new services  
line-up structure

fields in collaboration with leading scientists and engineers in academia, business and non-profit research organisations. ATMOS Global has become globally renowned for its long-term and consistent investment in developing innovative air quality management systems for the industry.

“ATMOS Global aims to be the air quality modelling and forecasting industry’s innovative leader on a global scale,” says the company’s global president and CEO Dr Orestis Valianatos. “Our forward-looking commitment to being the best is driven by our heritage, central values and global aspirations.”

ATMOS Global recently announced the global launch of the first-of-its-kind new global initiative VerifiedDust™, an ‘Evidence-Based Dust Management and Dust Control Verification Program™’. Its aspiration—“A journey of 1,000 mines, one mine at a time”—was inspired by ATMOS Global’s 2020 vision born from the desire to make a difference.

The international VerifiedDust program is essential to making successful local-level dust management plans a reality by providing stakeholders with an insightful understanding of leading-edge dust management and dust control



On site at Western Areas’ Cosmic Boy nickel concentrator

technologies that can be used for mine sites located anywhere in the world and the broader operational framework in which these dust management and dust control technologies are used.

VerifiedDust is a platform for engaging mine site operators with a systematic dust management and dust control framework that will support them in selecting the most suitable and sustainable approaches for their mining operations to ensure compliance with the relevant legislation, improve the company’s image, and increase profitability.

After undertaking a methodical and

thorough verification process on an annual basis, ATMOS Global awards the VerifiedDust accolade (valid for 12 months) to mine sites that are using cutting-edge dust management technologies and demonstrating an ongoing control of their dust emissions.

“Our VerifiedDust global program uses rating grids to provide mining operators with a practical and complete set of defined choices, specifications and actions that will bring immediate environmental benefits. VerifiedDust is awarded by ATMOS Global based on a three-level rating scale of 3, 4

“ATMOS GLOBAL AIMS TO BE THE AIR QUALITY MODELLING AND FORECASTING INDUSTRY’S INNOVATIVE LEADER ON A GLOBAL SCALE”





The Spotted Quoll project has reduced dust deposition by using dust impact forecasting from ATMOS Global

## “OUR FORWARD-LOOKING COMMITMENT TO BEING THE BEST IS DRIVEN BY OUR HERITAGE, CENTRAL VALUES AND GLOBAL ASPIRATIONS”

and 5 stars,” explains Dr Valianatos.

VerifiedDust came to life last year with Western Areas NL’s Spotted Quoll (Tim King) Open Pit Project (located in Western Australia), which was nominated as a joint finalist with ATMOS Global/ATMOS Australia for one of the most prestigious awards for environmental excellence in Australia: the Golden Gecko Awards for Environmental Excellence (Western

Australian Department of Mines and Petroleum, 2011). VerifiedDust (five stars) has been awarded for 2011, 2012 and 2013 to three of Western Areas’ mine sites: Spotted Quoll, Cosmic Boy and Flying Fox.

Western Areas is Australia’s class leading nickel producer. Its main asset is the 100 per cent owned Forrestania Nickel Project, 400 kilometres east of Perth. Western Areas’ primary nickel mines at Forrestania

are Flying Fox and Spotted Quoll. Flying Fox is one of the highest grade nickel mines in Australia and has been in production since 2006. Spotted Quoll commenced high grade nickel ore production via the Tim King open pit during the first half of 2010. The Spotted Quoll underground mine development (the Hanna Decline) commenced in April 2011. Ore from both mines is processed at the Cosmic Boy nickel concentrator, which has a throughput of 550,000 tonnes per annum. Western Areas is also an active nickel explorer in Western Australia, Canada and Finland.

ATMOS Global’s Air Quality and Climate Change Academy™ is dedicated to the mining industry and supports the VerifiedDust multi-industry program, taking the

form of ongoing ‘outside the classroom’ training and education. The Academy is a highly specialised and workplace-specific innovative instructional platform that delivers information and knowledge using an expert training architecture integrating formal and informal learning activities. It also uses the best process and technology to deliver timely and engaging learning solutions that provide real-time answers to employees’ work-related enquiries.

“The Academy opens the door to an optimal learning structure that closes the learning-doing gap by providing our clients with a hands-on approach to understanding and mastering the use of ATMOS Global’s world’s first advanced air quality management and dust management



platforms,” says Dr Valianatos. “It makes life better for people on and off the job and sustains the ‘human engine’.

“In the new world order, employees need to utilise the training and development opportunities offered by their organisations aimed at motivating and enhancing their performance and providing them with the skills required before they undertake a new task,” Dr Valianatos continues. “Employees

are not only seeking to work for companies like Western Areas that provide novel training opportunities—they are staying there, because of these systematic and ongoing development opportunities.”

The VerifiedDust program expands the portfolio of ATMOS Global’s elite research consulting services and world’s first multi-component systems that deliver more than 25,000 site-level

“WE DID NOT INVENT FORECASTING,  
WE INVENTED SUCCESSFUL DUST  
IMPACT FORECASTING”



The Flying Fox mine uses ATMOS Global technology to determine optimal allocation of dust management strategies



Western Areas’ Cosmic Boy nickel concentrator uses ATMOS Global’s web-based daily dust impact forecasts

dust impact forecasts every year: ATMOS-5D+™, DustAlert+™, DustFinder+™ and RiskBalance+™. This is achieved 24/7 through ATMOS Global’s ‘Center for Global and Site Specific Dust Impact Forecasting, Management and Control’™; all these

systems are being showcased this year at MINExpo 2012 in Las Vegas.

“ATMOS Global’s new dust impact forecasting centre has the global operational capability to allow mining companies worldwide to undertake, on a daily 24/7 basis, a ‘forward value evaluation’ of their site specific dust

**25,000**

Number of site-level dust impact forecasts delivered by ATMOS Global annually

management strategies based on an analytical approach that balances both current environmental management priorities and future corporate goals. We did not invent forecasting, we invented successful dust impact forecasting,” says Dr Valianatos.

ATMOS-5D+ is an ‘Integrated 5D Global and Site Specific Dust Impact Forecasting Management Platform for Mine Haul Road Dust Control’™, a world first platform that the company sees as a revolutionary catalyst, facilitating the enhanced understanding and control of dust emissions and marking the emergence of what it terms a new ‘sixth





Trucks at Cosmic Boy site



Western Areas' Spotted Quoll nickel mine



Aerial view of the Flying Fox nickel mine

sense' era in dust management. "Dust Management 5.0 is a concept coined by ATMOS Global that depicts the convergence of the digital and the physical world," confirms Dr Valianatos.

DustAlert+: 'Artificial Intelligence Multi-factor Multi-parameter Dust Impact Early Warning System'™ is an artificially intelligent 'digital guardian', an advanced dust mitigation strategy that allows mine

site operators to automatically anticipate potential dust impacts well before they happen and intervene to control dust impacts in a convenient and timely manner, either to prevent them or to reduce their consequences.

Also in the portfolio is the DustFinder+, an 'Ultra Intelligent Dust Assessment and Management System'™, a first-of-its-kind robust cross-channel dust management

**“ATMOS GLOBAL’S ARTIFICIALLY INTELLIGENT DUST MANAGEMENT SYSTEMS REPRESENT A QUANTUM LEAP IMPROVEMENT OVER TRADITIONAL ‘REACTIVE MECHANICAL AUTOMATION’”**

platform that allows mine operators to build serial source and activity specific (including drilling and blasting, bulldozing, excavating, loading and unloading, ore crushing and screening, conveying, waste rock handling, topsoil stripping and stockpiling activities, dust lift-off from exposed mining areas, stockpiles and haul roads) and site-wide dust management optimisation ('what-if') scenarios, to continually assess and monitor a range of possible dust control actions and outcomes of allocating resources among a broad set of alternatives and act to improve efficiency and productivity in the critical areas of mining operations.

RiskBalance+ is a first-of-its-kind philosophy that helps mine site operators compile 'Evidence-Based Dust Management

Plans'™ that are straightforward and results-oriented. "The RiskBalance+ philosophy supports ATMOS Global's artificially intelligent dust management systems built on the intelligent systems theory that allows systems to communicate with and learn from their environment in a 'space-time continuum', before, during and after potential dust impacts occur," explains Dr Valianatos. "ATMOS Global's artificially intelligent dust management systems represent a quantum leap improvement over traditional 'reactive mechanical automation'."

This constellation of transformative dust management technologies has been assimilated in the company's new services line-up structure, intuitively named the DustPack™: 'Evidence-Based Dust



Management™ for ‘any Mine, Anywhere, Anytime’. This could be the next big thing in mining. According to the level of complexity required by mine site operations, the DustPack is available in three high-tech options: Gold, Silver and Bronze.

The DustPack (Gold version) was instrumental in assisting Western Areas to reduce the total annual dust deposition recorded at the location of an environmentally sensitive receptor situated in the close proximity of the Spotted Quoll pit by 24.2 per cent (all factors considered) while the total annual ore mined has increased by 44.3 per cent for the open pit site (2010 versus 2011)—an outstanding environmental performance. “In addition to the evident benefits that mine sites enjoy by using DustPack to map, measure and coordinate the use of their dust management resources, reducing water, energy and labour cost associated with the use of water trucks for dust control, they also reduce the overall haul road maintenance costs, downtime on repairs and fuel consumption of haul trucks, as well as increase productivity by extending tyre life—all crucial elements in the efficiency equation for mining operations,” says Dr Valianatos.

ATMOS Global also uses green energy from GreenPower-accredited sources to offset by 100 per cent the carbon emissions related to its energy consumption. **BE**

For more information about  
ATMOS Global visit:  
[www.atmosglobal.com](http://www.atmosglobal.com)





*What is the best business book you have ever read, and why?*

*The Wealth of Nations* by Adam Smith. It reveals the theories that have inspired powerful economic and social changes in the world.

*Someone you would most like to have met, living or dead, and why?*

Warren Buffet. I admire this billionaire investor's unique approach to management and investment. The opportunity might arise in the near future to have lunch with him and potentially do business together.

*What do you consider to be your major achievement (in life or business)?*

I am grateful for my wonderful and supportive family, ATMOS Global's success in the global marketplace, and my academic (postgraduate) education: Master of Science and PhD in Physics, as well as Master of Business Administration. I am a global corporate ambassador who has excelled in academia and business from an early age. I have authored more than 50 ground-breaking research publications (internationally published) and developed an extensive experience and an influential global perspective in the fields of atmospheric and air quality modelling and forecasting, climate change, education and strategic corporate advisory services for the industry.

I am close to completing my professional doctorate research in International Business at the University of New England

# DR ORESTIS VALIANATOS

GLOBAL PRESIDENT AND CEO, ATMOS GLOBAL



“IF I HAVE SEEN  
FURTHER IT IS BY  
STANDING ON THE  
SHOULDERS OF  
GIANTS”

ISAAC NEWTON

(School of Business, Economics & Public Policy). UNE is renowned for the quality of its student experience and the excellence of its research specialisations.

*Who or what do you think is overrated?*

Time.

“Change is the way of life. And those who look only to the past or present are certain to miss the future”—John F. Kennedy.

*What mistakes have you made (professional or otherwise), and what did you learn from them?*

There are no mistakes, accidents or coincidences in life, only life-changing opportunities from which to learn and become better people. Mistakes are ‘greatness yet to become manifest’.

*Nobody’s perfect. What quality or ability do you wish you had?*

Playing a musical instrument. I am currently learning to play the piano.

*Which one piece of wisdom would you pass on to your successor?*

To have the courageous patience to live by their convictions and their values.

*Who has been your professional inspiration?*

“If I have seen further it is by standing on the shoulders of giants”—Isaac Newton.

I am fortunate to rely on an extensive list of past, present and future ‘giants’ in my professional life.

*How would you like to be remembered after your retirement?*

One cannot ‘retire’ from something that one values and is very passionate about. Take for example the 100-year-old Australian woman who recently played at the World Veterans Table Tennis Championships in China.

We all bring something of value to the people around us and our society at any stage of our lives. We never stop being part of the social construction process.

I would like to be remembered as a brilliant visionary committed to bringing new and beneficial business ideas and initiatives to reality. My personal mission is to have a positive influence on the life of every person I interact with every day for the rest of my life and to live in the world’s memory through a legacy of high-value achievements.

*Do you have a quote or motto you live (or work) by?*

Be careful what you wish for: life will always surprise you by making all your ‘real’ wishes come true. To create lasting positive change in your life you must make the right choices, all day every day. **BE**

Dr Valianatos is the global president and CEO of ATMOS Global.  
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# ATMOS Global™

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