



TECHNOLOGY INNOVATION AGENCY NATURAL RESOURCES



science, technology
& innovation

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA



TIA MINING INDABA DELEGATE 2026



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ABOUT TIA

The Technology Innovation Agency (TIA) is an entity of the Department of Science, Technology and Innovation (DSTI). TIA promotes the development and exploitation of discoveries, inventions and innovations to improve the quality of life for all South Africans by bridging the innovation chasm between research and commercialisation. In bridging the innovation chasm, TIA is an active funder, connector, facilitator and enabler.

Partnerships and collaborations are vital to TIA effectively fulfilling this role. TIA serves as the key national institutional intervention to facilitate the translation of South Africa's knowledge resources emanating from Higher Education Institutions (HEIs), Science Councils (SCs), other public entities, and the private sector into sustainable socio-economic opportunities.

Activities that lead to the creation of innovative businesses are centred around making direct investments or providing funding for companies in selected sectors or industries, whilst also investing in the wider support 'ecosystem' for innovative businesses such as investments in incubators or accelerators.



VISION

To be a leading technology innovation agency that stimulates and supports technological innovation to improve the quality of life for all South Africans.



MISSION

To facilitate the translation of South Africa's knowledge resources into sustainable, socio-economic opportunities.



TIA VALUES

Our values are:

- People Centric
- Pioneering
- Excellence
- Responsive
- Answerability
- Sustainability

POSITIONING

TIA supports the realisation of its mandate by enabling the progression of ideas across the innovation value chain through:

- Providing risk funding to enable the exploitation of technological innovation
- Supporting the commercialisation of industry enhancing technologies
- Providing access to infrastructure, enabling innovators to develop new technologies
- Promoting innovation skills development initiatives between academic institutions and industry
- Enacting innovation related programmes targeting specific groupings to provide access to specialised equipment, technical experts, and workspace

ROLE OF TIA

In bridging the innovation chasm, TIA is an active funder, connector, facilitator and enabler.

01

ACTIVE FUNDER

Providing risk funding and support for innovators to progress ideas towards market entry and commercialisation.

02

CONNECTOR

Catalyse partnerships between SMMEs, industries, universities and science councils to develop an enabled environment supporting sector-specific innovations for global competitiveness.

03

FACILITATOR

Attract and facilitate late-stage funding for the commercialisation of market ready technologies.

04

ENABLER

Reduce barriers of access to expensive high-end skills and equipment for innovators by repositioning Technology Stations and Platforms.

SECTORS WE FUND



Advanced Manufacturing

Supports the development of a knowledge economy in manufacturing by accelerating both the manufacturing capability and the knowledge intensity of the industry, and to increase and sustain competitiveness and innovation in South Africa's manufacturing industry.



Agriculture

Supports technologies with potential for commercialisation and that contribute towards competitive, sustainable and inclusive agriculture and agri-business value chains. This includes improving the diffusion of appropriate agricultural technologies to small-scale and emerging farmers.



Energy

Supports the development of an innovative, competitive and sustainable energy industry and South Africa's transition to a low carbon economy, contributing to the energy security of supply and the creation of emerging industries.



Health

Supports innovations to enhance South Africa's global competitiveness in the health arena and to deliver socio-economic value through technological innovation in healthcare products and services, addressing the diagnosis, prevention and treatment of priority disease areas in South Africa.



Information Communication Technology

Supports South African innovators in applying their skills to create new ICT services and products that present high potential of establishing sustainable social or commercial enterprises.



Natural Resources

Supports innovations to improve the competitiveness of mining, minerals, water resources, environmental and waste management sectors and to foster the development of new cutting-edge and knowledge intensive technologies.



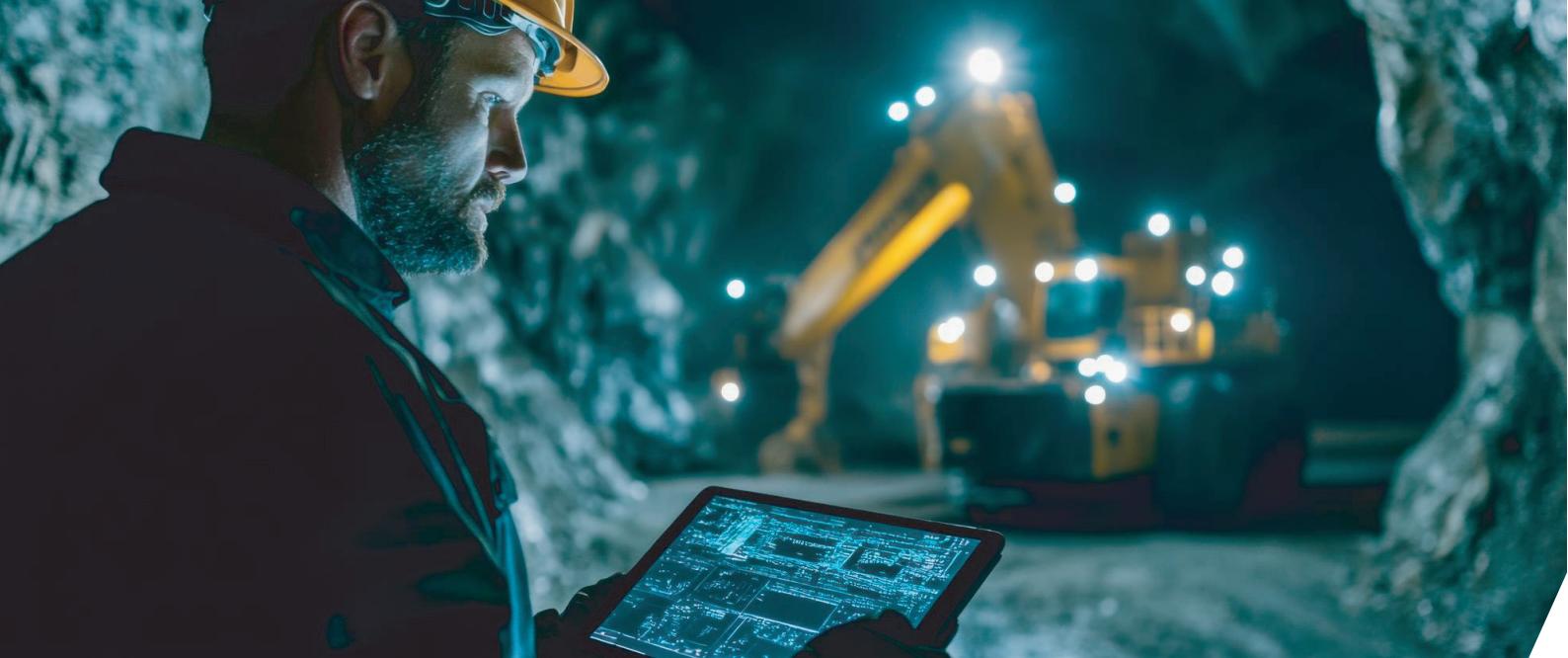
Indigenous Knowledge Systems

Supports innovations to harness indigenous knowledge and ideas with a focus on African traditional medicines, IK-based cosmeceuticals, nutraceuticals, and health infusions to serve as a source for technology transfer and commercialisation opportunities.



Industrial Biotech

Supports innovations to make impact in sectors such as the chemicals sector and various bioprocessing industries to produce high-value products with commercial application in various sectors including cosmetics, mining, as well as crop and animal health.



NATURAL RESOURCES

In the sector of Natural Resources TIA fosters the development of cutting edge, environmentally responsible technologies focusing on three areas, **water resources, circular economy, (waste management, environment), mining and minerals processing**. TIA funds and supports technologies to ensure water security by using advanced technologies to sustainably improve efficiencies in solving the water crisis, supporting the development of technologies that minimise impact on the environment from waste.

TIA supports technologies in the circular economy and the net-zero initiatives to sustainably improve process efficiencies. In Mining, TIA supports technologies to sustainably improve process efficiencies in the extraction and exploitation of natural resources (mining) and technologies to reduce worker exposure to hazards.

The DSTI Decadal Plan identifies the modernisation of mining as one of the key priority sectors that have a significant contribution to GDP. TIA as an implementing agent, prioritises innovations that will enhance the economic competitiveness of the South African mining sector

- Digitalisation of mines
- Rock cutting, rock-breaking and handling at stope face
- extending mine lifespan

FOCUS AREAS



Mining

- Automation & digitisation
- Mining beneficiation
- Sustainable process technologies
- Health & Safety
- Environmentally responsible technologies



Water

- Prevention of water leaks
- Acid mine drainage
- Digitisation of water processing
- Infrastructure support for water reticulation
- Nanotechnologies in water



Circular economy

- Developing new technologies
- Reduction of waste
- Improved reuse of materials
- Reduction of landfill sites
- Addressing plastic waste
- Net Zero

HIGHLIGHTS – MINING



Blue Cube

Blue Cube Systems (BCS) is a technology company that designs, manufactures, distributes and supports in-line mineral quantification instrumentation. The Blue Cube MQi technology is based on reflective spectroscopy for slurry and dry applications and absorption spectroscopy for solutions. Revenues generated from the technology developed with TIA funding have allowed expansion of product range to include state-of-the-art instrumentation for the online measurement of mineral grades in froth flotation concentrator plants. The Company has expanded into numerous countries.



Stone Three

Stone Three Digital an industrial IoT company, developed a real-time Process Advisory Dashboard using non-contact sensors, advanced analytics, big data and deep process knowledge for the minerals processing, sugar and pharmaceutical industries. Advanced diagnostics have been developed for the mining industry. The groundbreaking technology has been taken up by mining giants such as Anglo-American and obtained international partnerships with global giants such as Microsoft, FLSmidth, ABB, Bluecube Systems and General Electric Wabtec.



Trailblazer

Trailblazer Technologies (Pty) Ltd has developed the KNeW Technology for treating industrial effluent and acid mine drainage. The KNeW technology has been tested on tanker loads of mine water from various mining company operations. The Company has gained commercialisation traction with various agreements in South Africa and the USA.



Demonstration of a Biological Process for the Treatment of Acid Mine Drainage (AMD)

Acid mine drainage (AMD) is arguably one of the most serious environmental concerns in South Africa. With the country becoming increasingly water-stressed due to climate change, and various forms of pollution, water will continue to become much scarcer in the future. As a result of AMD's continued impact on South Africa's water systems, water security and socio-economic sustainability has become a highly contested issue. One of the technologies funded by TIA seeks to address this challenge by ensuring that the impact of AMD is mitigated, and the water can be treated for reuse. The technology, trademarked cloSURE®, developed under the project, Demonstration of a Biological Process for the Treatment of Acid Mine Drainage (AMD).



COLLABORATIONS & PARTNERSHIPS

TIA seeks to identify strategic partnerships with mining companies, technology providers, research institutions, and innovation intermediaries. These partnerships aim to co-develop and de-risk innovative solutions that address priority mining challenges in line with the agency's mandate. Through collaboration across the innovation ecosystem, TIA enables the translation of locally developed technologies into deployable, market-ready solutions, strengthening industry uptake and long-term sustainability.

Partnering for Commercialisation

By facilitating partnerships, enterprise development, pilot deployments, and scale-up opportunities, TIA supports the creation of sustainable business models for technology developers and SMMEs. This approach strengthens TIA's impact by converting innovation outputs into commercially viable products and services that generate economic returns and industry value.



Catalyst for Business Growth

Through its innovation support instruments, TIA acts as a catalyst for business growth across the mining ecosystem. TIA's interventions create commercial opportunities for mining stakeholders, technology developers, and SMMEs by reducing innovation risk, accelerating time-to-market, and enabling access to industry networks. This catalytic role enhances competitiveness while promoting inclusive participation in the mining value chain.

Driving Investment Readiness

TIA plays a critical role in preparing local innovative technologies and SMMEs for market entry and investor engagement by supporting technical validation, business development, regulatory readiness, and market positioning. This enables innovators to attract private capital, form strategic alliances, and scale solutions that contribute to sector-wide transformation.

Advancing Beneficiation and Downstream Value Creation

TIA recognises the critical role of beneficiation in driving inclusive industrial development and strengthening the competitiveness of the country's mining sector. By supporting technologies that enable mineral upgrading, value-addition and downstream processing, TIA helps unlock new economic opportunities beyond raw material extraction. This includes fostering innovation in areas such as advanced materials processing, mineral refinement, recycling, and circular economy applications.

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