

SOUTH AFRICA'S HYDROGEN INDUSTRY AT A GLANCE



M *Making* < *sure* { *it's possible* }



science, technology
& innovation

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA



Inspiring new ways



Foreword by the Minister

I am pleased to present this booklet, which profiles the South African hydrogen and fuel cell companies and institutions showcased at Japan's 25th International Hydrogen and Fuel Cell Expo.

South Africa's national system of innovation is being pivoted to place science, technology and innovation at the centre of government, education, industry and society. This will help to address national imperatives like inclusive development and making the country globally competitive.

The national system of innovation is vital to the hydrogen economy, driving the policy levers and instruments contributing to the conversion of South Africa's comparative advantages, world-class renewable resources, deep industrial capabilities and platinum group metals into bankable projects, domestic demand and export-ready value chains for green hydrogen and its derivatives.

In 2021, the Cabinet approved the Hydrogen Society Roadmap for South Africa, an important step in the journey to an inclusive, sustainable and competitive hydrogen economy by 2050, contributing to a just and inclusive transition to net zero carbon emissions and the advancement of societal well-being. The roadmap is advanced through the coordinated implementation of the Green Hydrogen National Programme and catalytic Strategic Integrated Projects aimed at stimulating the development of the local hydrogen economy.

We are finding practical ways to transform, renew and expand the academic and research workforce, build and maintain research, development and innovation infrastructure, and strengthen international science, technology and innovation cooperation.

International cooperation and science diplomacy are key to leveraging strategic partnerships to expand our capabilities, unlock opportunities for South African innovators and enterprises, and accelerate the translation of research into impactful outcomes.

South Africa and Japan share a long-standing relationship and common interests in science and technology



cooperation, formalised through a 2003 agreement and strengthened through ongoing collaboration in research, innovation and human capital development. Our partnership has been reinforced with a memorandum of cooperation in the fields of hydrogen and ammonia, reflecting shared priorities in sustainable energy transitions and future industrial value chains.

As you engage with this brochure and visit the South African pavilion, I invite you to explore potential areas for cooperation with South African companies and institutions across the hydrogen and fuel cell value chain – from innovation and project development to manufacturing and deployment. Together, we can unlock inclusive industrialisation, deepen technology cooperation, and grow a hydrogen economy that supports jobs and a just energy transition.

Prof. BE Nzimande, MP
Minister of Science, Technology and Innovation

I Introduction

Working towards a hydrogen economy in South Africa

South Africa is endowed with a wealth of mineral resources and is strategically positioned to use mineral beneficiation as a catalyst for transitioning to a low-carbon economy. By advancing the domestic processing of key minerals, particularly those integral to clean energy technologies such as platinum group metals (PGMs) and manganese, the country can significantly reduce its carbon emissions while also creating new avenues for commercialisation.

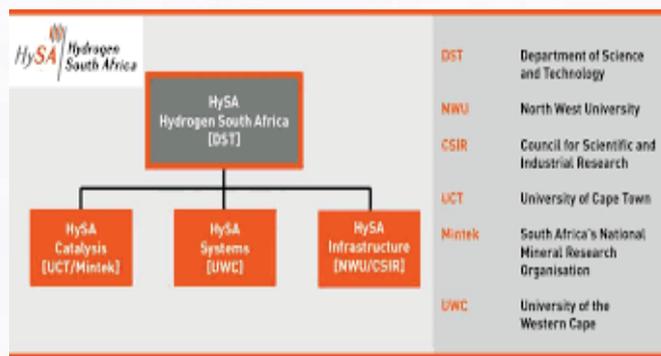
This approach not only enhances the value chain within the mining sector but also supports the development of green industries, positioning South Africa as a key player in the global transition to a low-carbon economy. The Department of Science, Technology and Innovation (DSTI) has supported such endeavours through Hydrogen South Africa (HySA).

HySA was established in 2007 to create knowledge, human resource capacity and enable the development of high-value commercial activities in hydrogen fuel cell technologies through adding value to the country's PGM resources. PGMs are key inputs in the development of fuel cell catalysts for both stationary and mobility applications, as well as catalysts for green hydrogen production through water electrolysis.

Relevant infrastructure, technical capabilities and competencies have been established through the three centres of competence: HySA Systems, HySA Catalysis and HySA Infrastructure.

HySA has developed PGM-based catalysts and membrane electrode assemblies (MEAs) for fuel cells and electrolyzers, as well as metal hydride-based hydrogen storage technologies, positioning South Africa as a significant player in the global market. These value-added components have been tested and validated through various deployments, such as stationary fuel cells to power critical infrastructure, and in mobile applications, such as hydrogen-powered forklifts and scooters.

Hydrogen South Africa (HySA)



HySA

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The overall goal of HySA is to develop and guide innovation along the value chain of hydrogen and fuel cell technologies in South Africa.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Manufacturing of electrolyser components
- ✓ Research, development and innovation
- ✓ Green hydrogen ammonia production
- ✓ Development funding
- ✓ Programming



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HySA Catalysis, with its focus on catalysts and MEAs for proton exchange membrane (PEM) fuel cells and electrolyzers, is hosted at Mintek and the University of Cape Town.

- ✓ Manufacturing of fuel cell components
- ✓ Research, development and innovation
- ✓ Programming



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Toyota Mirai being refilled with hydrogen at HySA NWU.

The HySA Infrastructure forms a Centre of Competence together with North-West University (NWU) and the Council for Scientific and Industrial Research (CSIR). HySA Infrastructure focuses on water electrolysis components (catalyst coated membranes, plates, stacks and systems, hydrogen storage in liquid organic hydrogen carriers, and hydrogen refueling systems with Toyota South Africa). It focuses on PEM technology for hydrogen production linked to solar resources, safety of hydrogen, and ammonia under the Science and Technology Research Partnership for Sustainable Development project at NWU, and methane pyrolysis at CSIR.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Research, development and innovation
- ✓ Programming



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The primary focus of HySA Systems is the development, validation and commercialisation of hydrogen and fuel cell technologies, with strategic emphasis on PEM fuel cell stacks, metal hydride technologies for hydrogen storage, and compression and the integration of hydrogen energy systems. HySA Systems aims to bridge the gap between fundamental research and industrial deployment by advancing technologies from laboratory-scale concepts to pilot-scale and demonstration-level systems. HySA Systems supports the development of local intellectual property, promotes industrial partnerships, enables skills development, and contributes to the establishment of a sustainable and globally competitive hydrogen economy in South Africa.

- ✓ Electricity
- ✓ Storage
- ✓ Manufacturing of fuel cell components
- ✓ Research, development and innovation
- ✓ Programming



2. Strategic Integrated Projects (SIPs)

Under the Green Hydrogen National Programme (GHNP), Strategic Integrated Projects (SIPs) are a legislative mechanism stipulated in the Infrastructure Development Act, 2014, which grants high-priority, "fast-track" status for approvals and authorisations of projects. Projects registered as SIPs get special, shortened timeframes for environmental impact assessments and other approvals.

The green hydrogen SIPs are spatially concentrated to unlock economic corridors and address historical imbalances. Most of the green hydrogen and new energy SIPs cluster in three main areas:

- **Northern Cape:** Focused on export-oriented production due to world-class solar and wind resources.
- **The Hydrogen Valley Corridor:** This links Limpopo (mining, e.g. Mogalakwena) to Gauteng (industrial/demand) to KwaZulu-Natal (ports, e.g. Durban/Richards Bay).
- **Coastal Export Nodes:** The Western Cape (Saldanha Bay) and Eastern Cape (Port of Ngqura/East London Industrial Development Zone) are hubs for green hydrogen and ammonia, leveraging existing port and industrial infrastructure for global markets.

3. Companies that play a role in the South African hydrogen and fuel cell ecosystem

ACWA Power (Saudi), in partnership with Industrial Development Corporation



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Acwa Power is a leading Saudi developer, investor, and operator of power generation, water desalination, and green hydrogen plants worldwide. The Industrial Development Corporation of South Africa, a government-owned development finance institution, signed an extensive memorandum of understanding with Acwa exploring a partnership in the development of green hydrogen and its derivatives in South Africa.

African Rainbow Energy and Power (Pty) Ltd



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African Rainbow Energy and Power (Pty) Ltd is an African energy company that focuses on clean energy solutions including renewables, hydro, gas, and complementary transmission investments in South Africa and Africa.



- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage

Afrox



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Afrox South Africa provides engineering services and a focused range of performance-enhancing atmospheric gases, welding and safety products, and liquified petroleum gas to valued customers through excellence in operations, customer service, product delivery, and investment in infrastructure, employees and technology for the benefit of all stakeholders.



Air Liquide South Africa



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Air Liquide South Africa supplies rare gases, specialty gas mixtures, ultra-high purity gases and chemicals, and related equipment and services. Products are supplied in compressed gas cylinders with volumes and purities available to meet the needs of customers in a wide range of industries.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power



Air Products South Africa



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Air Products South Africa manufactures, supplies, and distributes a wide variety of industrial and specialty gas products to the southern African region. Founded in 1969, the company has enjoyed consistent growth, establishing itself as an industry leader in the production of reliable, high-quality gases.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components



Anglo American Platinum



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Anglo American Platinum is a major producer of PGMs that are the key catalytic materials used in fuel cells. More than 75% of the world's known platinum reserves are found within the South African border. Anglo American Platinum is a founding partner in AP Ventures, a venture capital fund that promotes investment into advanced technology using PGMs. Anglo American Platinum is currently piloting the use of hydrogen as truck fuel at the Mogalakwena mine in Limpopo.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Research, development and innovation
- ✓ Programming



ArcelorMittal South Africa



ArcelorMittal

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ArcelorMittal South Africa is the largest steel producer in sub-Saharan Africa. It is a major player in all major global markets, including automotive, construction, household appliances, and packaging. It has leading research and development (R&D) and technology, as well as sizeable captive supplies of raw materials and outstanding distribution networks.



Associated Energy Services (Pty) Ltd



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Associated Energy Services (Pty) Ltd operates and manages thermal energy and utility plants in South Africa on behalf of industrial energy users such as food, textile, and paper processing plants. Outsourced operations include the acquisition of existing energy and utility operations, and upgrades to newly built energy plant operations.



Atlantia Green Hydrogen (Pty) Ltd

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Atlantia Green Hydrogen (Pty) Ltd is a Level I Broad-Based Black Economic Empowerment company and has 98+ years' combined experience in the following:

- National electricity transmission and distribution at EU scale; renewable energy integration, including battery energy storage systems.
- National air separation units and carbon dioxide business, engineering, operations and maintenance management; multiple large-scale hydrogen technology (electrolysis, steam methane reforming, partial oxidation and gasification).
- Industrial petrochemical complexes (e.g. Sasol, Linde Gas and NEOM).
- Investment banking, renewable energy investor (two 2 140MW REN wind farms, South African Renewable Energy Masterplan lead, former South African Wind Energy Association Chair).
- Metals refining and stainless steel, refineries (crude, coal-to-liquids, gas-to-liquids) food and beverage.

SIP: Atlantia Green Hydrogen production, including green ammonia – Saldanha Bay, Western Cape

This project aims to produce green hydrogen and ammonia, at-scale in a phased approach, within the special economic zone. The prefeasibility study and supporting studies have been completed, confirming the project's technical and financial viability for both export and domestic markets. Phase 1 targets 6 600 tonnes per annum green hydrogen, producing 33 000 tonnes per annum ammonia. Phase 4 targets 165 000 tonnes per annum green hydrogen, producing 825 000 tonnes per annum ammonia.

The feasibility study is in progress to position Saldanha Bay (the largest deep-water port in Africa) as a strategic industrial decarbonisation and green manufacturing hub aligned to the green hydrogen strategies of the Western Cape, FreePort Saldanha and national government, with export-oriented markets. Atlantia Green Hydrogen has the support of the relevant institutions as well as various government entities, given the national significance of the project.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Manufacturing of electrolyser components

Bambili Energy



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Bambili Energy's fuel cell stacks and systems are made in South Africa and produce clean energy from hydrogen. Modular configurations allow for fast and flexible deployment and expansion.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Manufacturing of electrolyser components



SIP: Hydrogen Valley Programme

This project is part of South Africa's Green Hydrogen National Programme and has been approved by Infrastructure South Africa. The Hydrogen Valley includes nine projects along the Limpopo-Gauteng-KwaZulu-Natal corridor. The project is spearheaded by the following organisations:

- Valterra Platinum.
- Bambili Energy
- The DSTI
- ENGIE
- The South African National Energy Development Institute.

BELL Equipment

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BELL and its international partner JCB have a strong interest in hydrogen. They have developed a new articulated hauler prototype that uses hydrogen fuel cells to tackle the issue of how to power heavy quarry machinery in a sustainable way.

✓ Mobility



Black Business Council



BLACK BUSINESS COUNCIL

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Black Business Council is a key player in the dynamics of

the business community in South Africa. It is on an expansionary and visionary path that aims to embrace all elements of the business community, no matter how small or diverse.

Cape Stack



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Cape Stack was established as a project development company in 2016. It designed, developed, constructed and operates a hydrogen fuel cell stack production facility in Cape Town. The company is 100% black owned, anchored by industrial professionals with a proven track record in the South African and African technology sector. As a new entrant, Cape Stack will focus on building and developing business relationships with local and international suppliers and customers. The project is awaiting final project information before registration with Infrastructure South Africa can proceed.



Central Energy Fund



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CEF SOC Ltd. is involved in the search for appropriate energy solutions to meet the energy needs of South Africa, the Southern African Development Community (SADC), and the sub-Saharan African region. CEF also manages the operation and development of the oil and gas assets and operations of the South African government.

Council for Scientific and Industrial Research



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The CSIR is South Africa's leading public research and technology organisation, mandated to conduct multidisciplinary research, technological innovation, and industrial development to support economic growth and societal advancement. The CSIR provides scientific, engineering and technology solutions across sectors such as energy, health, manufacturing, mining, defence, and the built environment, while also advising government on policy and strategic planning.

In the hydrogen sector, the CSIR plays a pivotal role in advancing green hydrogen production, storage, and utilisation technologies; supporting pilot and demonstration projects; conducting techno-economic and systems analysis; and contributing to national initiatives such as the Hydrogen Society Roadmap. It also supports infrastructure planning, industrial integration, skills development, and localisation strategies to position South Africa competitively within the global hydrogen economy.

✓ Research, development and innovation



Department of Science, Technology and Innovation

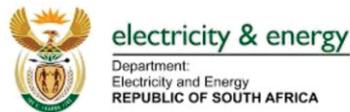


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South Africa's Department of Science, Technology and Innovation (DSTI) views hydrogen as a key enabler of decarbonisation, particularly in the transport sector – heavy-duty trucking, shipping, aviation, rail – and in major polluting industries such as steel, cement, chemicals manufacturing, and mining. The National Hydrogen Society Roadmap for South Africa 2021 and the launch of the Hydrogen Valley Feasibility Study Report are the culmination of a long-standing investment by DSTI in the development and application of scientific knowledge domains, such as the hydrogen economy, which South Africa sees as critical for advancing the national development and global competitiveness.

✓ Research, Development and Innovation

Department of Electricity and Energy



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The Department of Electricity and Energy is mandated to develop and implement national electricity and energy policy, oversee long-term planning and ensure a secure, reliable, affordable, and sustainable energy supply for South Africa. A core instrument under its mandate is the Integrated Resource Plan (IRP), which sets out the country's long-term electricity generation mix and infrastructure investments. Through the IRP 2025, the Department provides a framework for large-scale deployment of clean technologies, including onshore wind, solar photovoltaic, battery storage and distributed generation, while guiding the transition toward a lower-carbon power system. Although hydrogen is not a primary electricity generation technology within the IRP, the plan recognises the growing role of clean technologies and system flexibility, creating an enabling environment for green hydrogen production through expanded renewable energy capacity and grid development.

Development Bank of Southern Africa



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The DBSA seeks to support the development and funding of various technologies, including energy generation, transmission and distribution. As a leading financier of renewable energy, DBSA is also committed to supporting a just energy transition in Africa.

✓ Development funding



- Innovative grid solutions for energy injection and transmission for a variety of renewable sources, whether biogas, wind or heat power.

✓ Green hydrogen ammonia production



Enterprises UP



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Enterprises UP trains technical and vocational education and training college graduates in hydrogen fuel cell systems, in partnership with the University of Pretoria, Bambili Energy, the DSTI, the Department of Higher Education and Training, and the Energy and Water Sector Education Training Authority.

✓ Research, development and innovation



Enertrag



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Enertrag is an expert in building systems that harness the potential of renewable energy. Enertrag is a pioneer in the power-to-gas industry and, in 2011 opened the world's first hybrid wind to hydrogen power plant near its headquarters in Dauerthal, northern Germany. Adding to this, Enertrag has developed the following:

- PowerSystem, a software tool for operating and maintaining wind turbines around the world.
- System Technologies including Airspex and Procandela, lighting and radar systems aimed at reducing the visual impact of wind turbines at night in addition to other conventional lighting systems.
- Gridion emergency power systems.

Eskom Holdings SOC Ltd



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Eskom Holdings SOC Ltd is South Africa's primary electricity supplier that generates, transmits and distributes electricity to industrial, mining, commercial, agricultural and residential customers, and redistributors (metropolitan and other municipalities), who in turn distribute electricity to businesses and households within their areas of supply. Eskom plays a vital role in the Southern African energy landscape through its trading activities within the SADC and the continent. With a dual commercial and socio-economic mandate, Eskom is committed to ensuring energy security, financial sustainability and a just transition toward a lower-carbon future. Its operations supply over 86% of South Africa's electricity and approximately 20% of the power produced across Africa.

- ✓ Electricity
- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of electrolyser components
- ✓ Research, development and innovation
- ✓ Green hydrogen ammonia production



HDF Energy



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HDF Energy is a global pioneer in hydrogen power. It develops and operates high-capacity large-scale hydrogen-to-power infrastructure to provide firm or on-demand electricity from renewable energy sources (wind or solar), combined with high-power multimegawatt fuel cells.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Development funding



Hive Hydrogen South Africa (Pty) Ltd



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Hive Hydrogen South Africa (Pty) Ltd was registered in February 2021 and is backed by Hive Energy and Built Africa. The team has been operating since September 2019. It is establishing five large-scale hydrogen and ammonia plants in South Africa, powered by 15 GW of renewable energy. In 2021 it announced the establishment of a \$4,6 billion green ammonia plant. The plant will have a dedicated power supply at the Coega Special Economic Zone, alongside the Port of Ngqura.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Green hydrogen ammonia production



SIP: Hive Energy Green Ammonia Project – Eastern Ngqura, Eastern Cape

This project, located at Ngqura in the Eastern Cape, is a large-scale export-oriented green ammonia production facility. The project has completed its prefeasibility study and environmental impact assessment. It is designed to produce approximately 780 kilotonnes per annum (around 1 million tonnes per year) of green ammonia, powered by a renewable energy cluster comprising roughly 1 200 MW of solar photovoltaic capacity and 2 400 MW of wind generation, totalling approximately 3,5 GW. Supporting infrastructure includes desalination facilities, ammonia storage capacity of around 70 000 tonnes, pipelines, water and grid infrastructure, transmission lines to the Dedisa Substation, and integrated port logistics. The project targets commercial production from around 2026, supplying markets in Europe, the Far East, and the USA.

Hydrofuels Solutions Pty (Ltd)



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HydroFuels Solutions aims to build and develop a hydrogen production infrastructure and to deliver clean renewable energy projects in South Africa. Plasma waste gasification is one of the innovative technologies that can and will mainly produce green hydrogen, green methanol, green kerosene and electricity from biogenic sources as well as waste weedstock.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Green hydrogen ammonia production



HyPlat



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HyPlat, a subsidiary of Bambili Energy, is the first South African exporter of high-performance MEAs to European electrolyser and fuel cell companies. HyPlat beneficiates South African PGMs to make MEAs and its intellectual property is registered internationally in 11 key markets.

- ✓ Green hydrogen ammonia production
- ✓ Programming

Implats



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Implats is a leading, fully integrated producer of PGMs. The group is structured around six mining operations, supported by refining and processing facilities, and its dedicated refining business, Impala Refining Services. Its PGM products are exported to key global markets – including Japan, China, the USA and Europe – serving a wide range of sectors where these metals are essential for industrial, medical and electronic applications and contribute to a cleaner, greener world. Guided by a value-focused strategy, Implats aims to remain a high-value, sustainable and profitable producer that is socially and environmentally responsible, competitive, and increasingly positioned toward low-cost, shallow and mechanisable production over time.

Infrastructure South Africa



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Infrastructure South Africa hosted the inaugural South African Green Hydrogen Summit (SAGHS) 2022 in Cape Town. SAGHS showcased the country's offering as an early-stage, large-scale, inexpensive and world-class green hydrogen production hub and an investment destination in the total value chain.

✓ Development funding

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Isondo Precious Metals is a nationally designated SIP built to anchor the localisation of the green hydrogen value chain and unlock the economic potential of South African critical minerals, especially PGMs. Anchored by a four-storey manufacturing facility purpose-built to support the emerging green hydrogen and fuel cell economy, advanced equipment, and vertically integrated capabilities, Isondo beneficiaries these critical minerals into high-value PGM chemicals and precursors, PGM catalysts, and MEAs for electrolyzers and fuel cells. Isondo's advanced PGM analytical and MEA performance testing laboratories enable rapid innovation cycles, stringent quality control, and performance validation at every stage of development.

Isondo is building the foundation for a circular hydrogen economy through the development of recycling technologies that recover both PGMs and membranes from end-of-life systems. This closed-loop approach enhances supply security, reduces environmental impact, and significantly improves long-term cost competitiveness. Isondo represents a convergence of strategic mineral advantage, advanced manufacturing, and localisation policy alignment that is helping create a scalable platform transforming South Africa's critical minerals into clean energy infrastructure for the world.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Manufacturing of electrolyser components
- ✓ Green hydrogen ammonia production



SIP: Isondo Precious Metals (MEA) Project – Gauteng

The Isondo Precious Metals Project is a high-impact PGM beneficiation and advanced manufacturing initiative located at the OR Tambo Special Economic Zone in Gauteng, South Africa's premier hub for high-value mineral processing and export-oriented manufacturing.

Isondo is transforming South Africa's critical mineral PGM reserves into next-generation clean energy technologies. The project focuses on converting PGMs into high-value specialty chemicals, advanced catalysts, MEAs, and fully integrated stacks for electrolyzers and hydrogen fuel cells – critical components powering the global energy transition.

Now in the production startup phase, Isondo's state-of-the-art facility has been constructed and early-stage manufacturing is commencing. The platform integrates advanced PGM chemical production with catalyst formulation, MEA fabrication, stack assembly, closed-loop PGM recycling, and innovative analytical and MEA performance-testing laboratories. This vertically integrated model provides full value-chain control, from refined PGM inputs to high-performance energy systems.

As global demand for hydrogen, fuel cells, and green industrial solutions accelerates, PGMs remain indispensable to electrolyser and fuel cell performance. Yet much of South Africa's mineral wealth has historically been exported in raw form. Isondo is redefining this narrative by anchoring downstream industrialisation locally while positioning South Africa as a strategic supplier of advanced hydrogen technologies to global markets.

To accelerate the transition from early-stage production to full commercial-scale manufacturing, Isondo Precious Metals is seeking \$20 million in Round 2 funding. This investment will enable capacity expansion, working capital support, product qualification, commercial deployment, and market penetration – positioning Isondo as a globally competitive African leader in PGM-based clean energy materials and systems. Isondo represents a rare opportunity to invest at the intersection of critical minerals, advanced manufacturing, and the global hydrogen economy – unlocking greater value from South Africa's natural resources while powering a cleaner energy future.

Keren Energy



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Keren Energy is the first green hydrogen producer in South Africa. Its proof-of-concept plant is running in Vredendal and it has started the feasibility study on its commercial plant in Vanrhynsdorp, both in the Western Cape. The proof-of-concept site has a 100kW photovoltaic solar system installed, and this renewable energy will be used as the primary energy to produce green hydrogen. The Vanrhynsdorp site is fully permitted. Keren Energy aims to be the first commercial green hydrogen producer in South Africa.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Manufacturing of electrolyser components
- ✓ Green hydrogen ammonia production



KPMG



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KPMG Inc provides auditing and related services. In South Africa, there are 99 partners in four offices across the country. Services include: audit and assurance, tax and legal, deal advisory, technology advisory, and management consulting. KPMG in South Africa is a member firm of KPMG International Group, a Swiss entity that has operations in 146 countries worldwide.

Mainstream Renewable Power



Mr Emmet Curley
Head of Corporate Communications & Positioning
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emmet.curley@mainstreamrp.com
www.mainstreamrp.com/

Mainstream is a pure-play renewable energy company specialising in the development of offshore and onshore wind and solar projects.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Manufacturing of electrolyser components



Minerals Council South Africa



Mr Allan Seccombe
Head Communications
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www.mineralscouncil.org.za/

Minerals Council South Africa facilitates engagement between mining employers to examine policy issues and other matters of mutual interest and define desirable

industry viewpoints. It provides various initiatives to promote voluntary collaboration that does not encroach on the autonomy of members.



Mining Industry Association of Southern Africa



Mr Vusi Mabena
Executive Secretary
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MIASA works to promote and protect the interests of the mining industry in Southern Africa and create an enabling environment in which the industry can prosper.





Dr James Tshilongo
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In 2000 the Catalysis Group at Mintek was initiated to undertake Project AuTEK, which is primarily focused on gold catalysis. By building catalysis research and R&D capacity and expertise, the Catalysis Group has expanded its activities to include gold and PGMs. R&D is now conducted under three main programmes: Project AuTEK, the Advanced Metals Initiative, and HySA Catalysis.



pipeline industries, and promoting the sustainable use of energy. NERSA derives revenue by imposing prescribed levies on the gas, petroleum pipeline, and electricity industries.



national treasury

Department:
National Treasury
REPUBLIC OF SOUTH AFRICA

National Energy Regulator of South Africa



Ms Fiona Harrison
Manager - Acting Executive Manager: Corporate Services
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Tel: +27 12 401 4600
www.nersa.org.za

NERSA is a regulatory authority for the electricity, piped gas and petroleum pipeline industries. Operations include the issuing of licences, setting and approving tariffs and charges, mediating disputes, researching pertaining to the electricity, piped gas, and petroleum

Tel: +27 123 155 904
www.treasury.gov.za

The National Treasury is mandated to promote government's fiscal policy framework to do the following:

- Coordinate macroeconomic policy and intergovernmental financial relations.
- Manage the budget preparation process.
- Facilitate the Division of Revenue Act, which provides for an equitable distribution of nationally raised revenue between national, provincial, and local government.
- Monitor the implementation of provincial budgets.



Mr.Shawn Modise
Acting CEO
Tel:+27 53 833 1503
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SIP: Boegoebaai Green Hydrogen Port Development – Northern Cape

This project is a large-scale integrated green hydrogen and green ammonia production and export hub located on the Northern Cape coast. Sasol has completed a prefeasibility study outlining key enablers for South Africa to become a globally competitive producer. A Request for Qualification process has been concluded, with three joint venture entities appointed for progression toward the Request for Proposal stage. The Northern Cape Green Hydrogen Masterplan was launched in October 2023 to support the development. The project proposes the construction of a deep-water port on a 60 000 ha site, supported by up to 30 GW of wind and solar generation powering approximately 5 GW of electrolysers, alongside battery storage infrastructure. Targeted production is around 400 kilotonnes per annum of green hydrogen by 2030, supplying domestic markets and large-scale exports.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power



Oceanergy (Pty) Ltd.
Tel:+27 83 463 2652
www.oceanergy.com/kite-gas-fuel-ship/

Oceanergy has developed kite fuel ship technology – a ship-based mobile wind power plant – to harvest wind energy on the open ocean. Smartly navigated, according to the wind forecast, they find a permanent and strong wind, resulting in a multitude of power and energy to harvest. The Kite Gas/Fuel Ship is a renewable energy source with integrated hydrogen conversion and storage and logistics unit feed-in to hydrogen terminals, alternatively, liquefied natural gas or ammonia terminals. Calculations show that the Kite Gas/Fuel Ship can harvest up to 160 times more wind power per annum than a land-based wind turbine.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components



Presidency of South Africa



THE PRESIDENCY REPUBLIC OF SOUTH AFRICA

Tel: +27 12 300 5354
www.thepresidency.gov.za/

The Presidency is at the apex of the system of government in the Republic of South Africa. As one of the founding members of the Africa Green Hydrogen Alliance, South Africa seeks to promote continental green hydrogen cooperation.

✓ Development funding

Prieska Power Reserve



Ms Makole Mupita
Director
Tel: +27 11 706 3902
prieskapower.com
info@prieskapower.com

The Prieska Power Reserve Project is a catalytic project that will start producing green hydrogen and ammonia in 2030 through a combination of high-yielding renewable solar and wind energy resources, along with water and air. The project has been successfully registered with Infrastructure South Africa.



SIP: Prieska Energy Cluster green ammonia production, Northern Cape

This production initiative is located in Prieska in the Northern Cape and leverages the region's exceptional

solar and wind resources. The project is currently undergoing a feasibility study and is designed to produce approximately 70 kilotonnes per annum of green hydrogen and 398 kilotonnes per annum of green ammonia. It aims to support both domestic industrial demand and export markets, contributing to the Northern Cape's emergence as a global green hydrogen production corridor.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Mobility
- ✓ Stationary power
- ✓ Manufacturing of fuel cell components
- ✓ Manufacturing of electrolyser components
- ✓ Research, development and innovation
- ✓ Green hydrogen ammonia production

Pure New Energy



Akhil Woodraj
PTX Manager
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PNE AG is a German renewable energy developer and independent power producer known for planning, building, financing and operating wind and solar projects both in Europe and internationally. Beyond electricity generation, PNE is pursuing green hydrogen and power-to-X ambitions.

SIP: Benguela Green Ammonia Project – Western Cape

PNE is developing a Power-to-Ammonia (PtA) project along the coast of the Western Cape province in South Africa. The project aims to capitalise on the area's abundant renewable energy potential, particularly from wind and solar sources, to establish a sustainable green ammonia production facility.

The PtA plant is designed to produce 500 000 tonnes per annum of green ammonia using electrolytic hydrogen generated from renewable energy sources. The facility integrates solar photovoltaic and onshore wind power to drive a water electrolysis process, followed by ammonia synthesis. Several risk-mitigation steps have been conducted, including environmental pre-screening and review, preliminary front-end engineering design, and a marine baseline assessment.

The facility is strategically located in proximity to South Africa's largest and deepest natural harbour, the Port of Saldanha, as well as existing rail infrastructure, enabling the export of ammonia to international markets. PNE has signed a memorandum of understanding with S.E.T. Select Energy to develop the logistics and secure the offtake of the final product.

The project is seeking a development investment of \$15 million to inform the final investment decision of the project.

Red Rocket South Africa (Pty) Ltd

RED ROCKET

Mr Matteo Brambilla
Chief Executive Officer
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redrocket.energy
info@redrocket.energy

Red Rocket South Africa (Pty) Ltd is an integrated renewable energy independent power producer that develops, designs, constructs, operates, and owns utility-scale grid-connected renewable energy projects (wind, solar, hydro and biomass) with operations in multiple countries across Africa. Projects are sourced locally and across the African continent and developed accordingly. The company also participates in smaller tenders for private and governmental projects in South Africa.

- ✓ Manufacturing of fuel cell components
- ✓ Manufacturing of electrolyser components



Sasol



Mr Alfred Zulu
Vice President: Future Technologies
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www.sasol.com

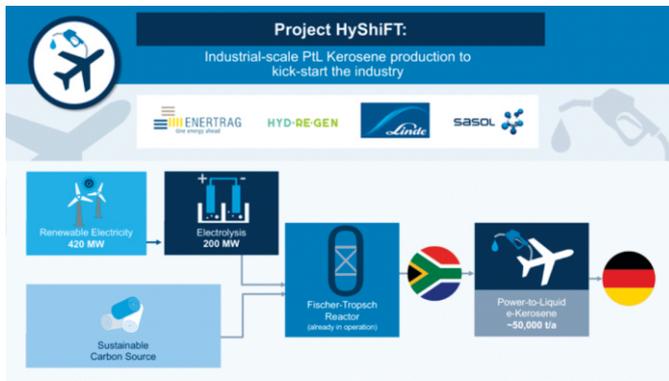
Sasol is an integrated energy and chemical company based in South Africa that uses proprietary technologies to convert fossil fuels and other feedstocks into high-value products. Its core activities include fuel production and chemical manufacturing. Sasol is world-renowned for its Fischer-Tropsch technology, which converts coal (coal-to-liquids) and natural gas (gas-to-liquids) into synthetic fuels like petrol, diesel and jet fuel. Furthermore, it produces a vast range of chemicals used in everyday items, including polymers, solvents, surfactants, waxes, and explosives.

SIP: Sasolburg Green Hydrogen Programme – Free State

The Sasolburg Green Hydrogen Programme is a research-driven and early-stage commercial initiative in the Free State focused on advancing green hydrogen and green ammonia production. The programme has successfully demonstrated the production of green hydrogen and has launched three dedicated Research Chairs in partnership with the DSTI, the National Research Foundation, and Sasol. The project is currently in the early business case development stage and is listed under Infrastructure South Africa. It targets production of approximately 1,8 kilotonnes per annum of green hydrogen and 10,2 kilotonnes per annum of green ammonia, supporting industrial decarbonisation and skills development.

HyshiFT Consortium

Mr Danie Cronje
Senior Vice President: Business Building
Tel: +27 10 344 5000
www.sasol.com/hyshift-consortium



SIP: HyShift sustainable aviation fuel – Mpumalanga

This project is a flagship sustainable aviation fuel initiative located at Sasol's Secunda operations in Mpumalanga. It aims to decarbonise the aviation sector through the local production of synthetic aviation fuels for domestic use and export. The project will integrate a 200 MW electrolyser powered by approximately 450 MW of renewable energy, feeding green hydrogen into Sasol's existing Fischer-Tropsch reactors to produce around 50 000 tonnes per day of power-to-liquid kerosene, equivalent to roughly two daily long-haul flights between South Africa and Germany. With an estimated hydrogen production capacity of 15 kilotonnes per annum, the project has successfully progressed to the next phase of the H2Global bidding process and represents a major step toward establishing Secunda as a sustainable fuels hub.

SeaH4



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SeaH4 is a biofuels startup that is developing biofuels based on algae as a carbon-free alternative to fossil fuels, initially by producing bio-liquefied natural gas as a bunker fuel.

Siemens Energy



Mr Thabo Molekoa
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 www.siemens-energy.com

The mission of Siemens Energy is to empower its customers to meet the growing global demand for energy while transitioning to a more sustainable world. Its innovative technologies, extensive energy experience, and an ambitious strategy to decarbonise global energy systems are all central to its efforts to be the partner and driver of the energy transition. Its top focus areas in environmental, social and governance, innovation and transformation share how Siemens Energy is making the future of tomorrow different today, for both its partners and its people.

- ✓ Green hydrogen production
- ✓ Engineering/installation
- ✓ Storage
- ✓ Manufacturing of electrolyser components

South African National Energy Development Institute



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 Head of Energy Secretariat
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 sanedi.org.za
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South African National Energy Development Institute was established in 2011 under the National Energy Act, 2008. The Act allows SANEDI to direct, monitor and conduct energy research and development; promote energy research, and technology innovation; and undertake measures to promote energy efficiency throughout the economy.

- ✓ Research, development and innovation



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The Centre for Renewable and Sustainable Energy Studies at Stellenbosch University enables a sustainable future for Africa through world-class renewable and sustainable energy research, advisory services, awareness campaigns and training programmes. It was established in 2007 to facilitate and stimulate activities in renewable energy studies and research at the world-class Stellenbosch University.

✓ Research, development and innovation

Trade and Industrial Policy Strategies



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TIPS is an independent, non-profit economic research institution established in 1996 to support economic policy development. TIPS undertakes quantitative and qualitative research, project management, dialogue facilitation, capacity building, and knowledge sharing. Its areas of focus are: Industrial policy, trade and regional integration, sustainable growth, and a just transition to a sustainable inclusive economy.



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Transnet is the largest and most crucial part of the freight logistics chain that delivers goods to each South African. Every day Transnet delivers thousands of tons of goods around South Africa, through its pipelines, and both to and from its ports.



✓ Green hydrogen ammonia production



Dr Olivia Barron

Dr Barron currently leads Mintek's fuel cell programmes. She has a PhD in Chemistry from the University of the Western Cape and more than 13 years of experience in renewable energy technologies, with expertise spanning gas separation technologies, lithium-ion batteries and hydrogen fuel cells.

Her primary area of specialisation is hydrogen fuels, where she has been involved across the value chain, from component development to system integration. She believes that the growth of South Africa's green hydrogen economy is critical to strengthening the national energy sector and to unlocking the full value of the country's abundant platinum group metal resources.

In support of these objectives, Dr Barron works closely with local and international partners to advance South Africa's hydrogen economy initiatives and champion the development of a competitive local fuel cell manufacturing industry.



Ms Buhle Khumalo-Bokaba

Ms Khumalo-Bokaba is the Chief Director: Science Communication at the Department of Science, Technology and Innovation. She provides strategic leadership in public and stakeholder communication, ensuring the national and international visibility of South Africa's science, technology and innovation agenda, supporting the Department's engagement with government, industry, international partners and the research community.

Buhle has worked in government, financial services and journalism, holding positions in strategic communication, marketing, content development, transformation and customer value management. She has led award-winning communication initiatives, rebranding programmes, policy support functions, and multi-stakeholder collaborations.

With a strong background in communication strategy, organisational governance and stakeholder engagement, she contributes to strengthening South Africa's global partnerships, particularly in science, technology and innovation areas aligned to the circular and digital economies; health, manufacturing and energy innovation; sustainability; and economic development.

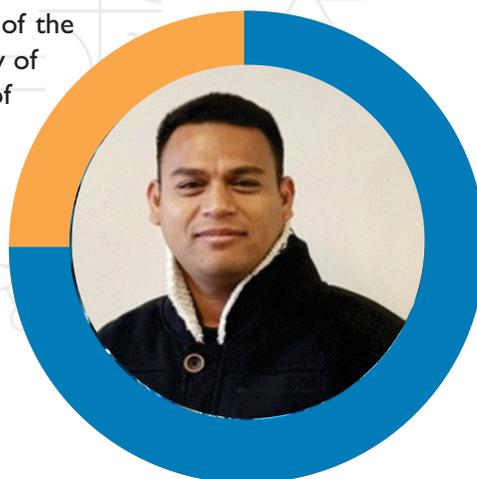


Dr Wafeeq Davids

Dr Davids is a key technology specialist for hydrogen technology-related applications at the HySA Systems Centre of Competence, which is part of the South African Institute for Advanced Materials Chemistry at the University of the Western Cape. He is currently involved in the planning and managing of hydrogen storage and hydrogen fuel cell system integration-related research, as well as lecturing and supervising postgraduate students.

The focus of his PhD was primarily on the surface chemistry of hydrogen storage materials. A postdoctoral research fellowship at HySA Systems from 2013 to 2017 saw him working on synthesising metal hydride alloys, the system integration of hydrogen storage tanks with polymer electrolyte membrane fuel cell stacks, and developing metal hydride compressors.

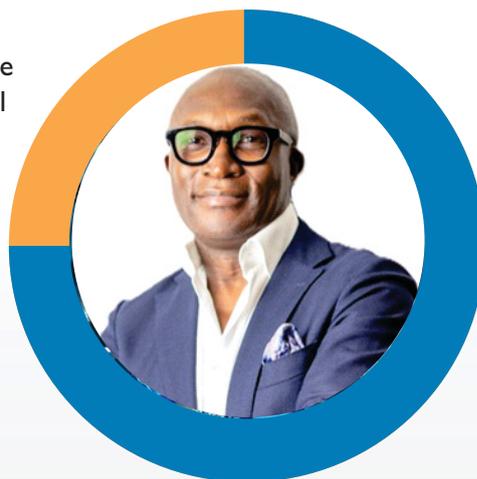
He has worked with many industry partners on hydrogen technologies, including Eskom Holdings, Anglo American Platinum, Impala Platinum, Hot Platinum, and TF Design.



Mr Nyonga Fofang

Mr Fofang is currently a director of Mergence Asset Managers and executive director of HyPlat. He has over 25 years of experience in international capital markets, during which he has been involved in all aspects of private equity investing, including mergers, acquisitions and leveraged finance.

With a BA from Harvard University and an MBA from CU Louvain, Belgium, he has previously worked as Executive Director of the Dema Group, a mining-focused private investment company in Johannesburg, South Africa, and as the Executive Director of Metallon Corporation, a private investment company in Johannesburg with interests in mining and financial services.

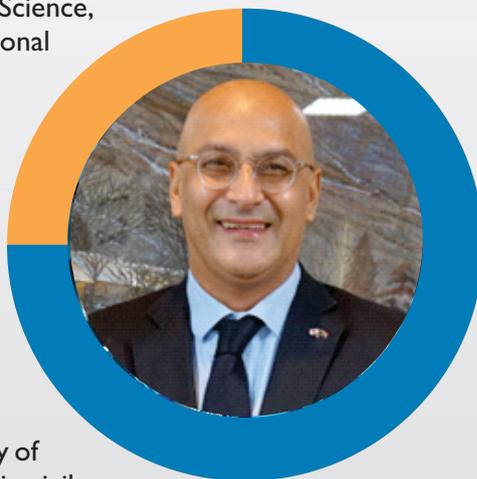


Mr Ghaleeb Jeppie

Mr Jeppie is the Minister Counsellor (Science, Technology and Innovation) at the South African Embassy in Tokyo. Before joining the Department of Science, Technology and Innovation, he served as the Chief Director: International Relations at the Department of Higher Education and Training.

Mr Jeppie joined the civil service in 1994 after the first democratic elections and is credited with establishing the post-apartheid education diplomacy function. This entailed developing relations with partners in various countries and with multilateral agencies, as well as advising the political principals under whom he served. He managed official development assistance programmes in the education sector and served on various international committees, including the UNESCO National Commission.

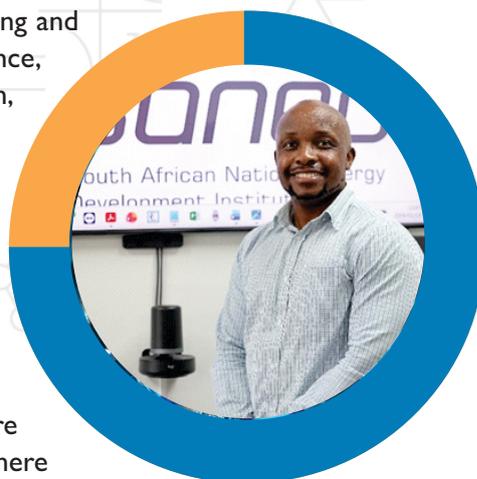
He studied at the University of the Western Cape and then at the University of London, where he obtained a master's degree and undertook part of his civil service training.



Dr Richmore Kaseke

Dr Kaseke is the Manager for Strategic Partnerships at the South African National Energy Development Institute (SANEDI). He is responsible for establishing and managing partnerships that support the implementation of the Science, Technology and Innovation Decadal Plan through energy-related research, development and innovation (RDI) being conducted across the national system of innovation. His role includes identifying partnership opportunities for the deployment, scale-up and market penetration of publicly funded intellectual property emanating from the Department of Science, Technology and Innovation's flagship energy RDI programmes, namely, Hydrogen South Africa (HySA), CoalCO₂-X, Energy Storage and Renewable Energy Hub and Spokes Programme.

Before joining SANEDI, Dr Kaseke worked as a project manager in the Centre for Renewable and Sustainable Energy Studies at Stellenbosch University, where he was responsible for the coordination of RDI activities in the Renewable Energy Hub and Spokes Programme. He was also responsible for ministerial energy projects supporting socio-economic development in disadvantaged communities.



Dr Alina Kozhukhova

Dr Kozhukhova is a senior postdoctoral researcher and laboratory manager at the HySA Infrastructure Centre of Competence at North-West University (NWU), transitioning into a senior subject specialist position at NWU. Her PhD in Chemical Engineering from NWU focused on the development of support structures for hydrogen-related applications. Her expertise spans catalyst design and characterisation, and the development of technologies for hydrogen safety, thermal energy generation, and hydrogen storage systems. She was awarded a National Research Foundation-Sasol Postdoctoral Innovation Programme Fellowship for 2023 to 2025, and then an NRF Innovation Postdoctoral Fellowship for 2025-2026. Dr Kozhukhova has been a member of the Catalysis Society of South Africa since 2022 and has served on the Scientific Advisory Board of the International Centre for the Sustainable Development of Energy, Water and Environment Systems since 2025.



Dr Setobane Mangena

Dr Mangena is the Chemicals Cluster Executive Manager at the Council for Scientific and Industrial Research (CSIR) in South Africa. Before joining the CSIR, he spent about 20 years at a multinational petrochemical company in South Africa in the roles of principal researcher, senior manager and acting vice president. He holds a PhD in Chemical Engineering as well as an MBA in Renewable Energy.

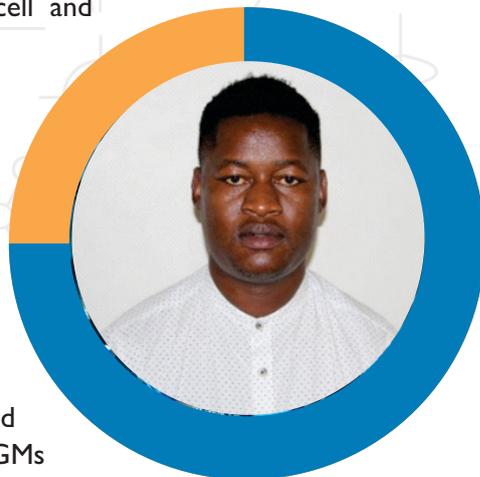


Dr Victor Mashindi

Dr Mashindi is a Technical Specialist at Isondo Precious Metals, where he works on membrane electrode assembly (MEA) technologies, platinum group metal (PGM) chemicals and precursors, and PGM-based catalyst systems for fuel cell and electrolyser applications.

He obtained his PhD from the University of the Witwatersrand, where he was a postdoctoral research fellow from April 2021 until he joined Isondo in 2024. His focus was on fuel cell and electrolyser technologies, and developing deep technical expertise in materials, catalyst layers, and electrochemical performance.

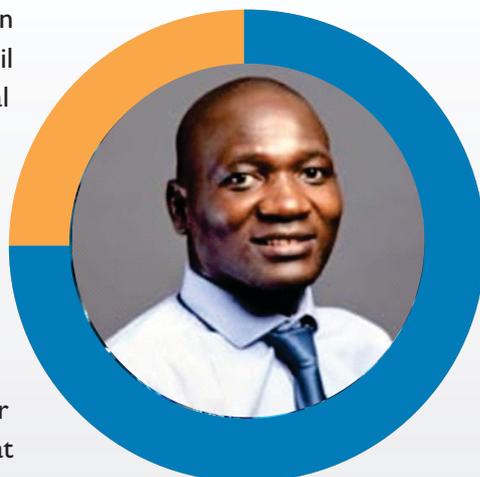
Dr Mashindi is a specialist in fuel cell and electrolyser systems, with his research and professional work centred on the design, development, and optimisation of electrochemical energy devices. He is particularly interested in catalyst architecture, membrane-electrode integration, and the role of PGMs in enabling high-performance hydrogen conversion technologies. His experience in both academic and industry positions him at the interface between fundamental electrochemistry, applied materials engineering, and the commercial deployment of fuel cell and electrolyser technologies.



Dr Mike Masukume

Dr Masukume is a principal researcher and project leader at the Hydrogen South Africa Carbon Capture and Utilisation Research Group at the Council for Scientific and Industrial Research. He holds a DTech in Chemical Engineering and an MSc in Project Management and has led many research projects.

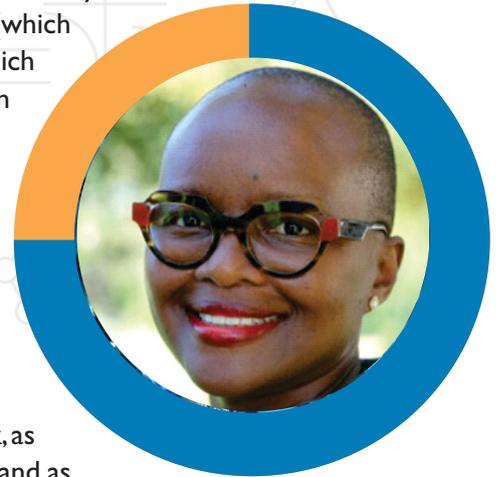
He is a co-developer representing the CSIR in the Mast3RBoost consortium, an international collaboration of 13 partners developing a technology to compact one kilogram of hydrogen in a 20L cylinder at just 100 bars. This is 86% less pressure than the current compression technology allows. He leads the work package that is responsible for developing ultraporous materials (known as metal organic frameworks) at scale, as well as their composites and applying machine learning algorithms to enhance their performance.



Ms Zanele Mbatha

Ms Mbatha has over 27 years of work experience in the renewable energy industry, mining industry and financial markets. She is currently CEO of both HyPlat (which manufactures membrane electrode assemblies and Bambili Energy (which manufactures hydrogen fuel cell systems and their sub-components). On behalf of Bambili, Zanele is helping to develop the fuel cell industry and the first hydrogen valley in South Africa, in partnership with the South African government and South African and international corporations. Among other things, the partners aim to create hydrogen economic hubs and roll-out hydrogen fuel cell trucks and buses. She is also leading the creation of the first hydrogen fuel cell training programme in Africa, which has graduated 35 engineers and technicians.

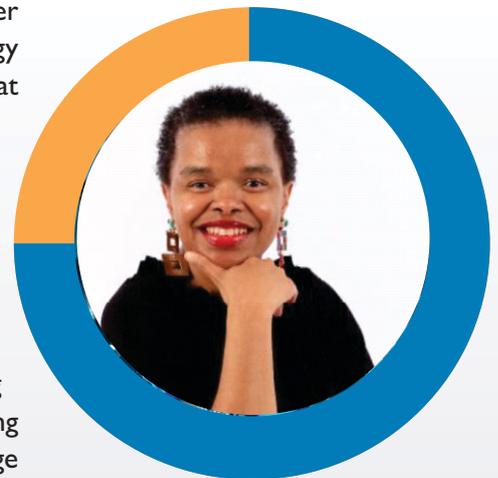
Previously, she worked as Head of Financial Markets at the SA Reserve Bank, as the CEO of Incwala Resources, a platinum mining company in South Africa, and as co-founder and Director of Dema Group, a majority shareholder in Incwala Resources.



Ms Mandy Mlilo

Ms Mlilo is currently serving as the Acting Chief Director: Hydrogen and Energy at the Department of Science, Technology and Innovation. Her responsibilities include leading and supporting the implementation of energy innovation policies and the deployment of net-zero energy technologies that enhance national energy access, resilience and security. She is also responsible for promoting the diversification of the country's energy mix and enabling a just energy transition that is inclusive, sustainable, and responsive to South Africa's development priorities.

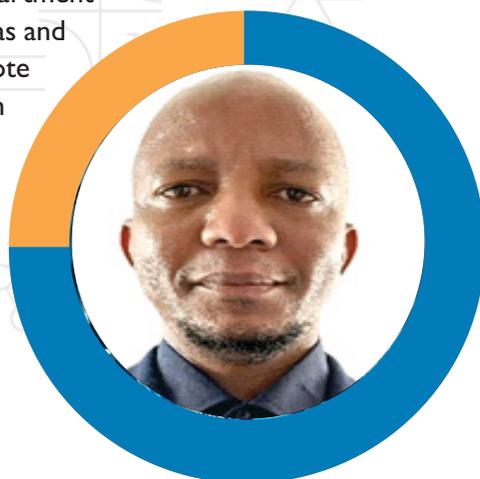
In her decade of experience in the public sector, Ms Mlilo has focused on the development and implementation of policies and relevant instruments, platforms and programmes aimed at stimulating, developing and entrenching a culture of innovation in the South African energy sector, and on fostering interaction and innovation among the stakeholders in the energy knowledge value chain. She also has five years' experience in process control and operations at mineral processing and pyrometallurgical pilot plants, as well as five years of experience in a nuclear environment.



Mr Tebogo Mokoma

Tebogo Mokoma is currently the Director: Bilateral Cooperation at the Department of Science, Technology and Innovation, focusing on countries in the Americas and Asia, and the BRICS+ grouping. One of his key responsibilities is to promote the South African national system of innovation as a preferred destination for science, technology and innovation cooperation and research and development investment.

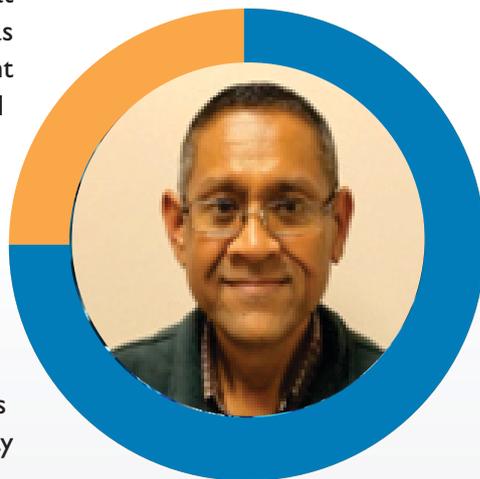
Mr Mokoma was a founding member of the committee for the Science Diplomacy Capital for Africa initiative. His work experience, spanning 17 years, includes teaching, research and science diplomacy. He has worked for institutions such as the Human Sciences Research Council and the National Research Foundation.



Mr Shaun Pershad

Shaun Pershad is a chief engineer at Eskom, and has spent the past 34 years at its Research, Testing and Development unit in South Africa. His work has included research, testing, optimisation and innovation related to power plant system components. Areas of past involvement included applied experimental stress and vibration analysis, structural integrity, emissions reduction and coal gasification.

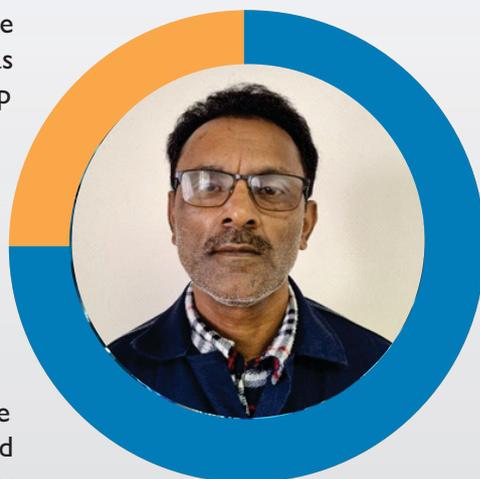
Since 2020 he has been working in the emerging hydrogen economy area, with particular focus on business applications relevant to Eskom. He is engaged in renewables and hydrogen technology research, pilot project development, and future commercial developments. Since 2020, he has been a member of the stakeholder group implementing South Africa's Hydrogen Research, Development and Innovation and Hydrogen Society Roadmaps.



Mr Mahalingham "Tony" Ramanjalam

Mr Ramanjalam is a consultant with over 35 years of professional experience in the synthesis and technology of platinum group metals (PGMs). He has researched, developed, designed and manufactured a range of platinum group metal compounds which were precursors targeted for the auto catalyst industry.

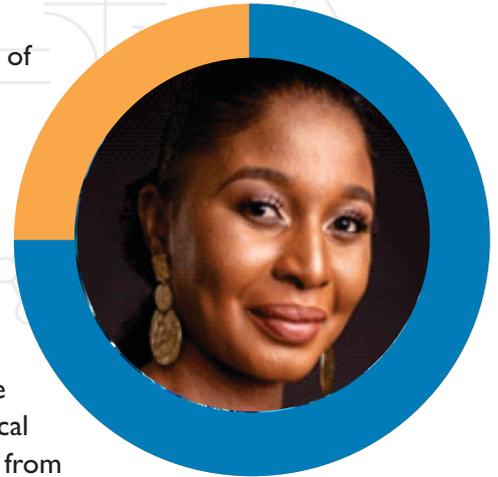
He manufactured a platinum on beryllium catalyst for AECL and developed a closed-loop model to recover platinum from spent catalysts. He developed and manufactured the platinum precursor salt and solution used as a promoter for the Sasol Fischer-Tropsch cobalt catalyst. His wide range of expertise in the field of precious metals science and technology has seen him working with leading experts on technology transfer during the commissioning phase of Heraeus South Africa. He believes that value-added beneficiation could turn South Africa's PGM resources into technologically excellent products.



Dr Khavharendwe Rambau

Dr Rambau is a seasoned energy professional and leader with extensive expertise in renewable energy, hydrogen storage and energy storage solutions. Her journey in hydrogen began with research and development at the Council of Scientific and Industrial Research. She is currently Deputy Director: Hydrogen and Energy at the Department of Science, Technology, and Innovation, driving innovation and sustainability in South Africa's energy sector.

Her priorities are on the implementation and coordination of South Africa's Hydrogen Society Roadmap and the implementation of the National Hydrogen and Fuel Cell Technologies RDI Strategy. Her role includes supporting the department's mandate to enable the commercialisation of hydrogen fuel cell technologies through the local manufacturing of components based on intellectual property resulting from publicly financed R&D, with an emphasis on the development of value-added components emanating from the four Energy RDI Flagship Programmes.

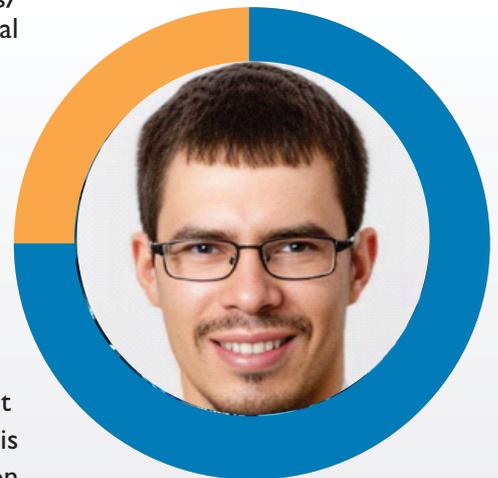


Carel Minnaar

Mr Carel Minnaar is a senior engineer and project manager at ET Energies. He specialises in hydrogen generation technologies and renewable energy integration, with a focus on high-efficiency system design and industrial deployment.

With a master's degree in engineering from North-West University and expertise in computer, electronic and electrical engineering, his research and professional work centre on advanced power conversion and PEM electrolyser systems for sustainable hydrogen production.

Mr Minnaar previously served at the HySA Infrastructure Centre of Competence, where he led the development of automated electrolyser testing systems and contributed to high-pressure stack design. In his current role at ET Energies, he is the lead designer of PEM electrolyser stacks (he is the main inventor in a pending US patent) and on-site hydrogen generation systems, supporting innovative clean energy solutions for industrial and water treatment applications.



Prof. Rhiyaad Mohamed

Prof. Mohamed is an Associate Professor in the Department of Chemical Engineering at the University of Cape Town, and serves as Key Technology Specialist at the HySA Catalysis Centre of Competence.

He specialises in proton exchange membrane (PEM) electrolysis, electrocatalysis, and catalyst-coated membrane (CCM) manufacturing, with a focus on durability engineering and critical mineral optimisation for green hydrogen systems. His work integrates materials development, device-level performance validation, and applied testing to support scalable hydrogen technologies.

Prof. Mohamed works at the interface of science, industry, and policy to strengthen South Africa's hydrogen technology capability and expand international research and industrial partnerships in the global hydrogen economy.

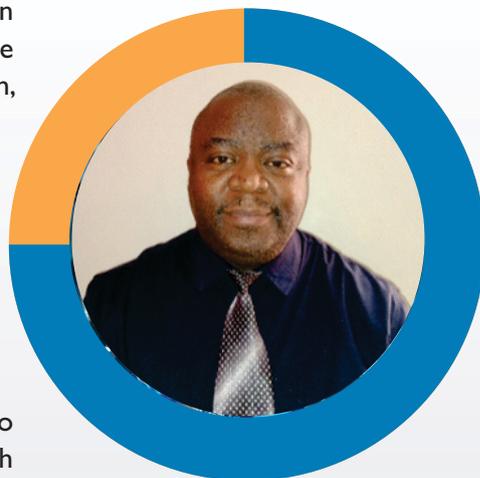


Dr Njabulo Siyakatshana

Dr Siyakatshana is a Senior Manager for Strategic Programmes at the Advanced Production and Security Division at South Africa's Council for Scientific and Industrial Research (CSIR). He also heads the Hydrogen Coordination Office at the CSIR. He was instrumental in launching an online mentoring platform and is currently developing the CSIR's hydrogen research, development and innovation strategy.

He is an experienced senior engineer/programme manager with skills in computational fluid dynamics, Monte Carlo stochastic simulations, chemical process development and design, agro-processing, water treatment, greenhouse gas emissions modelling, and hydrogen and renewable energy, as well as their application in various industries.

He started at the CSIR as a postdoctoral researcher and left it in 2018 to manage a portfolio of technology development programmes such as fluorochemical expansion, advanced materials and energy storage initiatives at the South African Nuclear Energy Corporation. In September 2020, he re-joined the CSIR as a Research Group Leader for Climate and Air Quality Modelling.

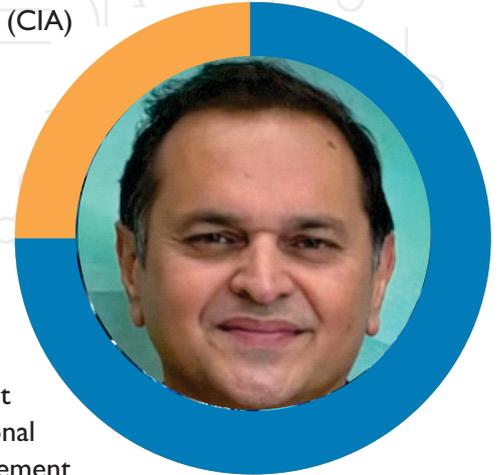


Mr Kiran Somera

Mr Kiran Somera is a highly experienced senior procurement and supply chain executive with over 30 years of leadership experience across multinational and South African organisations. He is also a Certified Internal Auditor (CIA) accredited by the Institute of Internal Auditors.

Currently serving as Commercial Executive at Isondo Precious Metals, he previously held executive leadership roles at Air Liquide Southern Africa, where he managed procurement across Sub-Saharan Africa, led teams of up to 18 professionals, and delivered cost savings of approximately R40 million. He also implemented robust procurement governance frameworks.

Earlier in his career, Mr Kiran Somera held senior supply chain and audit leadership roles at several well-known companies, where he managed national distribution networks, inventory optimisation, freight contracts, risk management and internal audit functions. His areas of expertise include strategic sourcing, supplier negotiations, working capital management, governance, risk and compliance, and operational efficiency.

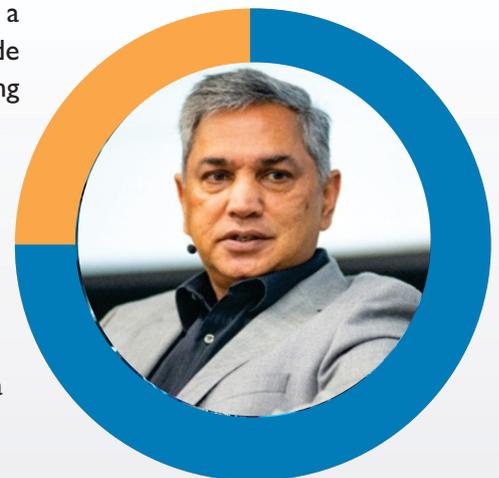


Mr Vinay Somera

Mr Vinay Somera is the founder and CEO of Isondo Precious Metals (IPM) a PGM technology company focused on producing membrane electrode assemblies and PGM catalysts for fuel cells and electrolyzers. IPM is working to deploy three hydrogen refuelling stations and up to 300 fuel cell buses and trucks based on access to 7 tons of hydrogen per day in Johannesburg.

Before founding IPM in 2016 he spent 25 years within the Impala Platinum (Implats) group, ultimately serving as the Group Executive: Market Development and Strategy. He helped create and manage Impala Refining Services, from a zero base into a one-million ounce business over a decade. He helped build and manage Impala's auto-catalyst recycling business from a zero base up to 30% of the global recycled volume of auto-catalysts.

He has an Executive MBA from the University of Cape Town's Graduate School of Business

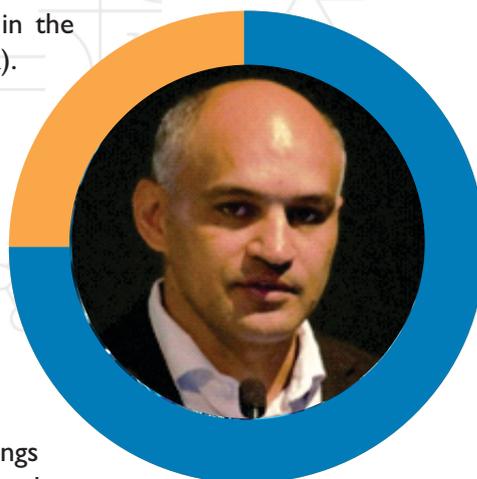


Mr Ashton Swartbooi

Mr Swartbooi is a senior researcher and current Acting Research Group Leader for the Hydrogen South Africa and Carbon Capture and Utilisation group in the Chemicals Cluster at the Council for Scientific and Industrial Research (CSIR).

He has mostly worked in the energy space, with a focus on clean and green processes and material development. With a background in chemical engineering, his focus has been on pilot plant operations, when scaling up newly developed processes.

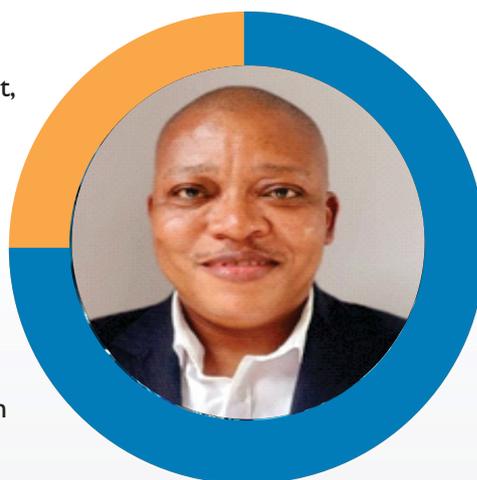
Now, his focus is mostly on catalysis, and he has developed a stable catalyst for cracking methane gas into low-carbon hydrogen and solid carbons. This is an essential bridging technology towards decarbonisation of various industries, without needing to invest in large new infrastructure costs. Mr Swartbooi has also been involved in many technical committee meetings regarding hydrogen safety codes and standards, and has been a contributing author to numerous PtX feasibility reports for the South African landscape.



Mr Mfundo Verby

Mr Verby is a Senior Manager at Eskom Research Testing and Development, having over 21 years of experience in the electricity supply and petrochemicals industries. He has worked in both technical and management roles in operations, mega-projects and, currently, in the research environment.

He is responsible for driving innovation in ensuring successful research, technology pilots and demonstrations in Eskom's generation business, including renewable plant technologies, clean coal technologies (biomass and gas co-firing), hydrogen technology, and other decarbonisation research aligned to the organisation's strategy and transition pathway.



Mr Sicelo Xulu

Mr Xulu is currently Chairperson of the South African National Energy Development Institute (SANEDI) Board, where he shapes national energy development strategies and supports policy alignment for innovation and sustainability. In 2018, he served as a consultant and advisory panel member for the interministerial task team on electricity reticulation, advising the Department of Cooperative Governance and Traditional Affairs on constitutional authority, municipal debt restructuring, and the evolution of decentralised energy governance.

His career began in 1994 at Eskom, where he developed a strong foundation in infrastructure maintenance management. In 2002, he joined City Power Johannesburg as a Transmission Senior Engineer, eventually becoming Managing Director.

Mr Xulu holds an MPhil in Electrical and Electronic Engineering (cum laude) from the University of Johannesburg.



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