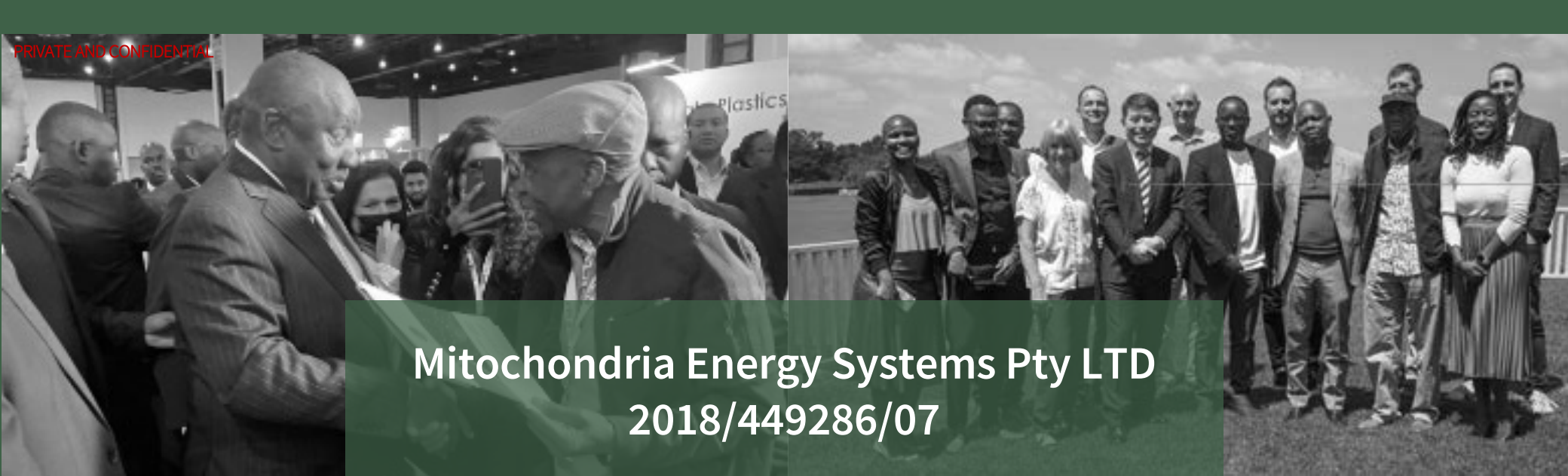




# MITOCHONDRIA ENERGY SYSTEMS PROJECT PHOENIX

July 2023



**Mitochondria Energy Systems Pty LTD**  
**2018/449286/07**

**94 Jan Smuts Avenue, Saxonwold**  
**Johannesburg, Gauteng**  
**2196, South Africa**

**PO BOX 412234 CRAIGHALL**  
**JOHANNESBURG, GAUTENG, 2024**



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Recipient will rely on its own due diligence investigation and assumptions to arrive at a final decision in respect of its intention to invest in MES.

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# WELCOME TO THE MITOCHONDRIA CAMPUS THE ERA OF THE PROSUMER!



MITOCHONDRIA  
Energy Systems

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# Foreword by IDC and DBSA

## Industrial Development Corporation of South Africa Limited (IDC)



“Together with Mitochondria, IDC has been instrumental in developing the new hydrogen industry for South Africa. More recently, the IDC is fulfilling a leading role in the development of a Green Hydrogen Commercialisation Strategy (GHCS) for South Africa through its chairmanship and secretariat of the Green Hydrogen Panel. The local manufacture of fuel cell and electrolyser equipment is one of the key elements of the GHCS.

IDC has supported the project development of Project Phoenix from the early beginnings to the successful testing of the fuel cell stack. These are exciting times for the introduction of new technology into SA particularly considering South Africa’s energy constraints. Mitochondria is making good progress with high quality work. By local production of fuel cells, Project Phoenix will contribute to South Africa’s long term comparative advantage in the global green hydrogen industry. IDC is proud of the partnership with Mitochondria on project Phoenix and is looking forward to the completion of this project.”

## Development Bank of Southern African Limited (DBSA)



“The DBSA supported Mitochondria with Project Preparation Funding for the fuel cell technology development. The DBSA anticipate that Project Phoenix has great potential to:

- a) with the addition of the green hydrogen, as an alternative fuel source option, will play an active role in the Just transition to achieve net zero emission goals of the South African Government by 2050
- b) promote energy security through diversification of the available energy mix in South Africa
- c) stimulate economic growth; through job creation, providing alternative lower cost energy options
- d) achieve the localisation of clean energy solutions
- e) provide distributed energy generation for industrial and commercial applications
- f) DBSA looks forward to a successful completion of the BFS carried out by AVL List GmbH and Ceres Power as technical partners.”





01

# INTRODUCTION

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# INTRODUCTION AND BACKGROUND

The Quest for Sustainable and Affordable Energy Security in Africa is real and urgent. More than 600 million people in Africa lack access to modern energy services and the problem is getting worse as the pace of providing these services is overtaken by increasing demand.

In his book, *Principles for Dealing with the Changing World Order, Why Nations Succeed and Fail*, the billionaire founder of Bridgewater Asset Management company Ray Dalio writes; *“I have learned that one’s ability to anticipate and deal well with the future depends on one’s understanding of the cause/effects relationships that make things change and one’s ability to understand those cause/effects relationships comes from studying how they have changed in the past.”*

It is in this context that one should understand the evolution and development of Mitochondria Energy which draws its lessons from understanding the history of energy transitions and from biomimicry - learning from nature and the energy systems of nature. We learn that the history of civilizations from several thousands of years ago can also be viewed as a history of energy and communications transitions (see image). The global energy landscape, as demonstrated by history, is always changing and this change must be proactively anticipated. Mitochondria is doing exactly that.

The second learning from nature is that there are various models of energy generation. At Mitochondria we believe that we are witnessing the emergence of a decentralized, distributed and networked energy future typified by the Mitochondria organelle found in every cell in humans and animals hence the name Mitochondria.



The story of the development of Mitochondria Energy is a story of resilience and perseverance going back to around 2007 and is testimony to an enduring principle etched in the history of epoch-making events. It started with a thought and a desire to do something to change the reality of access to affordable and sustainable energy using the hydrogen fuel cell technology.

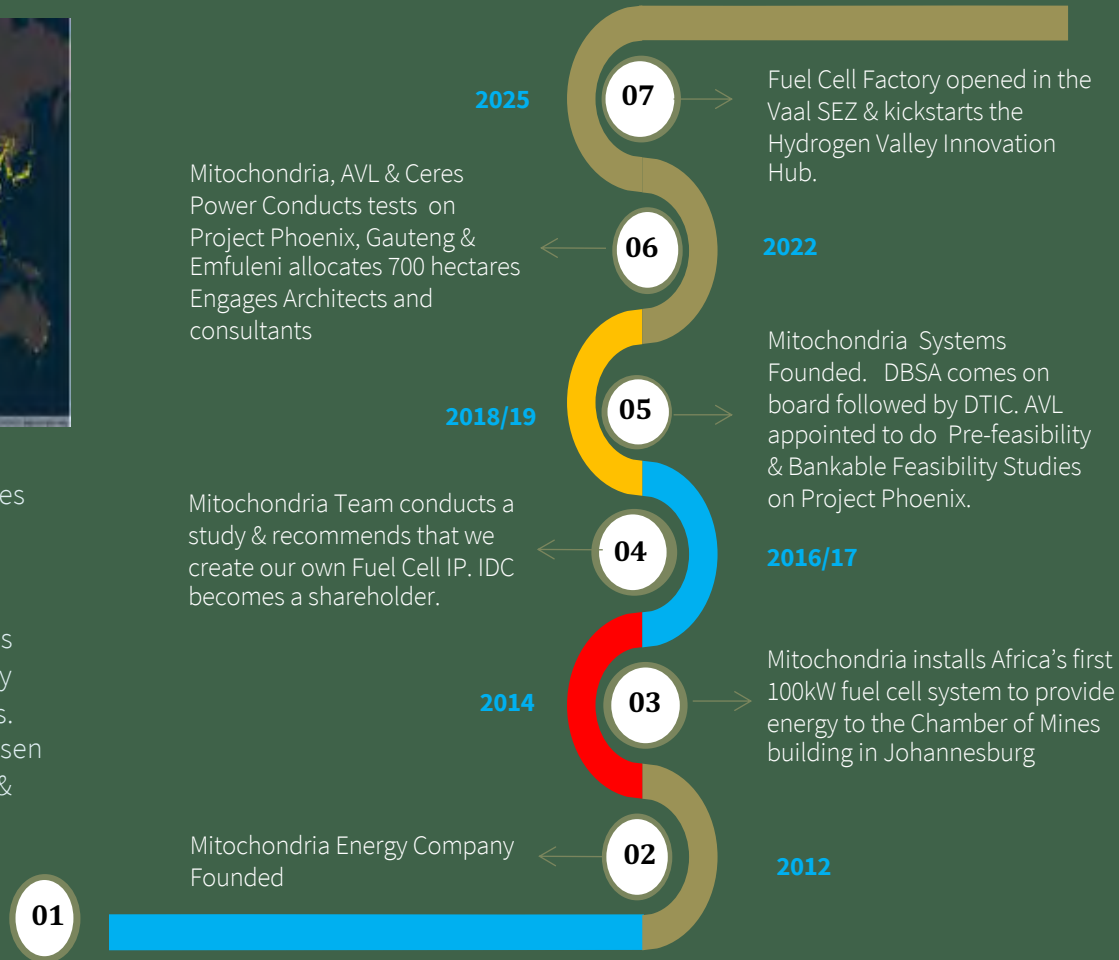


# A BRIEF HISTORY OF MITOCHONDRIA



**2007:** Mashudu Ramano decides to participate in the Hydrogen and Fuel Cell Sector

**2008 -2010:** Mashudu embarks on an extensive study of energy transitions of the last 200 years. The name Mitochondria is chosen as it represents decentralized & distributed energy solution in nature.

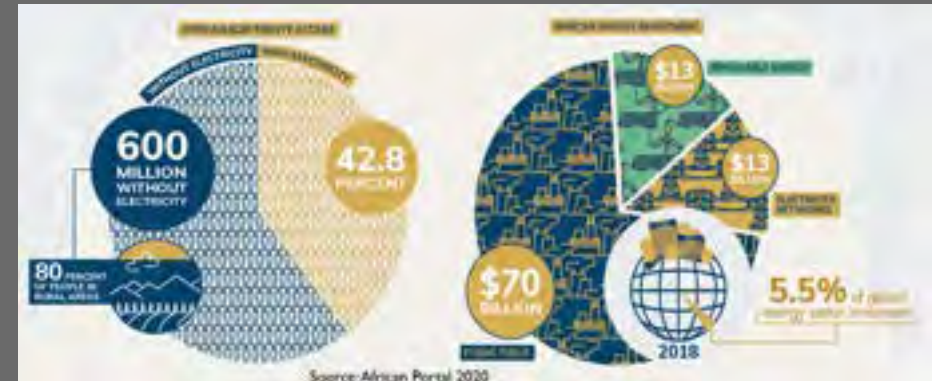


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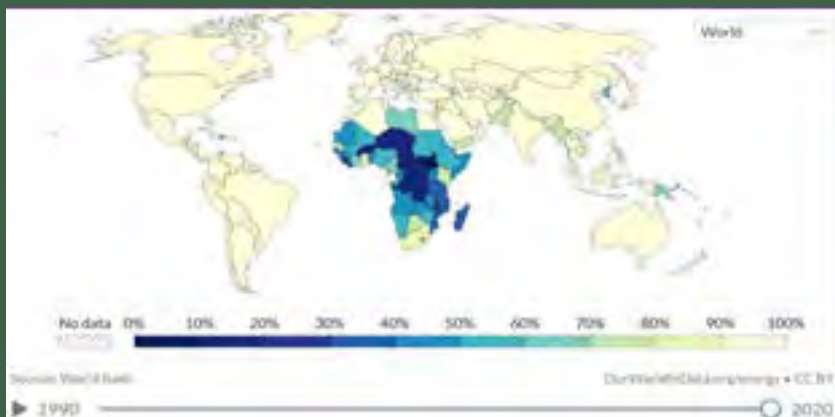
# THE ENERGY CHALLENGE IN AFRICA

THE POWER CRISIS IS GREATER IN SUB-SAHARAN AFRICA THAN ANYWHERE ELSE IN THE WORLD!

According to the United Nations Statistics Office on the SDGs, deficits in electricity are increasingly concentrated in sub-Saharan Africa. This situation is a far cry from the United Nations Sustainable Development Goal number 7 whose purpose is to Ensure access to affordable, reliable, sustainable and modern energy for all. The African Development Bank Group states that the per capita consumption of electricity in Sub-Saharan Africa (excluding South Africa) averages only 124 kilowatt-hours a year and is falling. The rate of consumption is barely 1 percent of that in high-income countries. If entirely allocated to household lighting, it would hardly be enough to power one light bulb per person for six hours a day. The entire installed generation capacity of Africa's 48 Sub-Saharan countries is just 68 gigawatts, no more than Spain's. As much as one-quarter of that capacity is unavailable because of ageing plants and poor maintenance.



This crisis is seen to be getting worse by Jean Mulupo of the School of Chemical and Metallurgical Engineering, University of Witwatersrand entitled *A mini-review of practical interventions of renewable energy for climate change in Sub-Saharan Africa in the last decade (2010-2020): implications and perspectives*. She writes “Eliminating energy constraints is essential for economic and social progress. In addition to significant geographic disparities (among nations and between urban and rural areas), 70% of people in Sub-Saharan Africa lack access to electricity, and this number continues to rise as electrification programs fail to keep pace with population growth [26]. Moreover, despite contributing a negligible amount to global greenhouse gas emissions, Sub-Saharan Africa is already one of the world's regions most affected by the rising risks of climate change (droughts, floods), with grave consequences for poverty and ensuring access to affordable, sustainable, and modern energy services for all remains, therefore, a major concern for Africa. Additionally, despite Sub-Saharan Africa's low contribution to CO2 emissions due to its low industrialization, the region's energy demand is expanding rapidly.”



Countries in Africa have the lowest access to electricity in the world

Although the situation in reality is lack of access to electricity and modern cooking energy services, most of the energy investments in Africa are skewed in favour of the fossil fuel sector.



## THE PROPOSED SOLUTION TO AFRICA'S ENERGY CHALLENGE



Mitochondria Energy is offering Africa, starting with South Africa, the 200-year-old hydrogen Fuel cell technology which silently and without combustion or moving parts converts chemical energy directly into electrical energy, with high electrical efficiency of 60% and 90% combined heat and power - no emissions if one is using hydrogen as a fuel and low emission of pollutants if hydrogen is extracted from methane. It is a decentralized and distributed solution that is scalable from kilowatt to multimegawatt scale (see above). The Mitochondria solution heralds a new future in energy generation and will restructure the provision of energy, ushering in the era of the Prosumer, a term coined by Futurist Alvin Toffler in 1980. The terms *prosumer* and *presumption* describe a rise in user participation, blurring the line between production and consumption activities, with the consumer becoming a prosumer. The Mitochondria fuel cell solution meets 11 of the 17 Sustainable Development Goals.

## THE ESTABLISHMENT OF A FUEL CELL MANUFACTURING ECOSYSTEM: THE FIRST IN SOUTH AFRICA AND AFRICA

Mitochondria Energy proposes to establish a manufacturing facility on 700 hectares of land provided by the Emfuleni Municipality in Rietspruit in Vanderbijlpark which will be designated shortly as a special economic zone (SEZ) popularly referred to now as the Vaal SEZ. TKDS Architects have provided the following designs of the proposed Mitochondria Campus, the African continent and designed by AVL Engineering, a global Engineering firm of more than 70-years-old.



The fuel cell manufacturing facility is the first of the ecosystem to be established in what is being described as “*The Hydrogen Valley Innovation Hub*”, which will also house parts of the 450 components manufacturers that comprise the Mitochondria fuel cell system. According to Boston City Consulting, the hydrogen components market is expected to grow to \$200 billion per annum by 2050. Mitochondria has set a target for South Africa and the rest of the continent at 20% by 2050. This translate into an industry that will be two and half times bigger than the current mining industry which is \$15 billion per annum.



# PROJECT IMPACT



## NEW INDUSTRY FORMATION

Mitochondria's Hydrogen Valley Innovation Hub will be the first of its kind in South Africa. In 2022 Project has Strategic Infrastructure Project Status



## STRONG PARTNERS

Leading project development institutions and technology specialists along with Mitochondria's Team have developed project Phoenix.



## STRONG RETURNS ON INVESTMENT

Key Investment returns:  
IRR above 20%  
NPV above R5 billion  
Payback period 10 years



## JOB CREATION

The project will create more than 4000 jobs (direct and indirect)



## LOCALISATION

Strong localisation focus to facilitate local supplier development. We aim to source as many components locally



## ENVIRONMENTALLY FRIENDLY

The electrochemical process in the fuel cell produce electricity, heat and water in a clean and sufficient manner to reduce the effect on the environment.



## CUTTING EDGE TECHNOLOGY

Developed in partnership with leading fuel cell experts globally.



## DECENTRALISED DISTRIBUTED ENERGY

Energy generation is onsite and anytime, anywhere. Flexible Baseload Power.



## ACCESSIBLE MARKET

Target market of 3 - 5 GW  
Expression of interest of large private hospital group  
Shortlist of immediate pipeline of offtakes



## COMMUNITY SUPPORT

Early community engagements to ensure community participation and readiness.



## SCALE

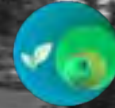
Opportunity to scale – increasing revenue without significant cost.



## INDEPENDENT EXTERNAL REVIEW

The project work packages has been reviewed by independent and external service providers.

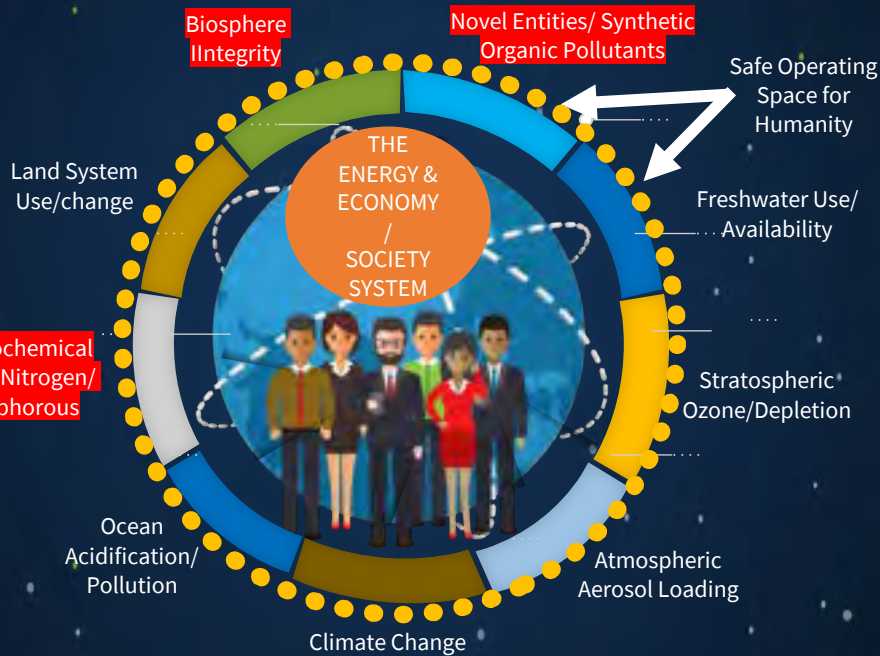




02

# BUSINESS & MANAGEMENT PHILOSOPHY

# OUR FOUNDING PHILOSOPHY: WE OPERATE OUR BUSINESS IN THE SAFE PLANETARY BOUNDARIES DEFINED BY NATURE



The Universe is a humongous Energy System  
comprised of 90% Hydrogen

# THE INTERCONNECTED REALITY THE ENERGY/ ECONOMY/ SOCIETY/ SOLAR SYSTEM HOLARCHY

Mitochondria's basic approach to its operations is biomimicry- *ask nature* and its business and management philosophy is rooted in the principles observed in nature.

The first observation is that the Mitochondria business exists in an interconnected and interdependent reality and is part of what we call the energy/economy/society planetary systems, all of which are part of the solar system. This is based on Arthur Koestler's understanding and theory that reality is made up of holons i.e., part-wholes or in other words, reality is made up of systems within systems that exist within larger systems. This means that Mitochondria cannot survive and grow as a business outside of the economy-society and planetary systems of which it is a part.

Mitochondria is therefore very conscious of this reality and derives its practices from this understanding. Mitochondria must manage and operate its business within the limits and boundaries imposed by nature. Our actions and business activities have a direct impact on the ecosystem in which we exist and operate our business –

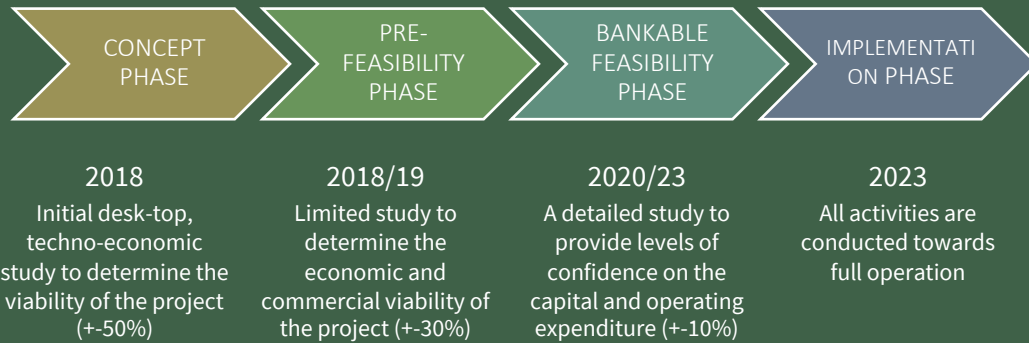
there are systems boundaries in which we must operate which have now been codified in the concept of planetary boundaries as depicted in the image.

Not only are we physically interconnected, but now with the advent of digital technologies are discovering that we exist in a digitally connected reality. All these observations are critical to the strategy of how Mitochondria conducts its business and ecological consciousness is a reality we must consider in developing our strategies and how we do business.

The second observation we make is that Mitochondria has been able to develop its solution to meet Africa's energy challenge because Mitochondria is fundamentally a business ecosystem.

The idea of a business ecosystem model is derived from the work of James Moore who in 1993 proposed that a company should be viewed not as a single firm in an industry, but as a member of a business ecosystem with participants spanning across multiple industries and geographies.

# BEST PRACTICE IN PROJECT DEVELOPMENT



Following the completion of a Pre-feasibility Study, the Bankable Feasibility Study (BFS) for Project Phoenix commenced in 2020 whose aim was to de-risk the development to a plus minus 10% cost range.

The assessment included the technology development, rigorous market study technology, environmental and regulatory impact assessment financial modelling and risk assessment factors of the Project.

The governance structure included a Steering Committee comprised of representatives of the Industrial Development Corporation (IDC), the Development Bank of Southern Africa (DBSA) and the Department of Trade, Industry and Competition (DTIC) whose primary role was to provide oversight on the project decisions related to the Bankable Feasibility Study and to ensure that the overall objectives of the Bankable Feasibility Study were realised.

The composition of the Committee comprised IDC – 2 members including the Chair, DBSA – 2 members, Mitochondria – 2 members. The Department of Trade, Industry and Competition (The DTIC) maintained an observer status.

The Steering Committee has had the full power and authority to

- Consider and amend the BFS budget;
- Approve the Feasibility Report;
- Make recommendations to appoint professional service providers;
- Recommend preferred options;
- Ratify Project decisions.

Mitochondria is extremely grateful to the Steering Committee’s guidance and input into Project Phoenix. The Steering Committee supported the technology options, the pursuit of Hydrogen as a fuel source, and the choice of the site for the Fuel Cell Manufacturing facility. In the proposed Vaal SEZ



From left to right: Luvo Vanyaza (Mito), Mahandra Rooplal (IDC), Otshepeng Moraka (Mito), Jan van der Merwe (Mito), Annmarie Buck (IDC), Pete Wilson (Mito), Lucky Simelane (DBSA), Justice Ngwenya (DTIC), Fa Mulumba (DBSA)

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# MITOCHONDRIA'S BUSINESS ECOSYSTEM

The history and the evolution of Mitochondria is testimony to this fact. Mitochondria developed the energy solution through a network of partners from across the world. The collaboration and sharing and transfer of knowledge, skill and technology is large and impressive and is illustrated below.

The Mitochondria Fuel Cell Solution is the result of a vast network of knowledge, skills and experience drawn from a vast network of people and organizations from across the world.

The core technology is from UK-based Ceres Power, the systems integration skills from AVL Engineering, a company based in Austria with over 200 engineers working on fuel cell technologies, and the inverter skills and manufacturing assembly line skills come from South African entities, Power-on and Jendamark.

The more than 450 components that make up our fuel cell are sourced from partners from the US, Europe and South Africa.

Funding to date has been a collaboration between government, the IDC, DBSA, and the Founder of Mitochondria Energy.

Management's primary task has been coordinating all these critical partners to deliver an energy solution fit for the purpose of African energy requirements.





# MITOCHONDRIA IS GRATEFUL TO THE FOLLOWING: FUNDING PARTNERS



**the dtic**  
Department:  
Trade, Industry and Competition  
**REPUBLIC OF SOUTH AFRICA**

## TECHNOLOGY PARTNERS



Founded in 1948 with a proven track record of 75 years. AVL has 11200 employees of which more than 7500 are engineers and scientists. AVL invests more than R4 billion per annum in research and development.

AVL started fuel cell development in 2002 and is the the largest engineering service provider globally of fuel cells and electrolysers. AVL has in total more than 600 engineers working on fuel cells and electrolyser engineering.



Ceres Power is a UK-based company that was developed at Imperial College London in 2001. They have been a leading Solid Oxide Fuel Cell technology developer for over 20 years. They currently employ more than 600 employees.

Ceres Power has more than 100 unique patent families that enable their current business of licensing their technology. Ceres has developed its SOFC stack called the SteelCell™ with ceramics on a metal base support. The SteelCell™ allows for low temperature, low cost, robust, efficient, reversible and manufacturable fuel cell stacks.



Jendamar Automation designs and manufactures turnkey production lines. Jendamar is a South African company with a global footprint. From specialised machine builder to global tech company, Jendamar continues to drive forward-thinking tech solutions and improve production line efficiencies for the automotive industry. Jendamar has an international presence in South Africa, India and Germany and a sales office in the USA. Jendamar has 650 employees with a EUR 70 million turnover in 2021. Jendamar offers a complete, one-stop automation solution for the automotive industry. From first contact to after-sales support.

## OTHER PARTNERS INCLUDE

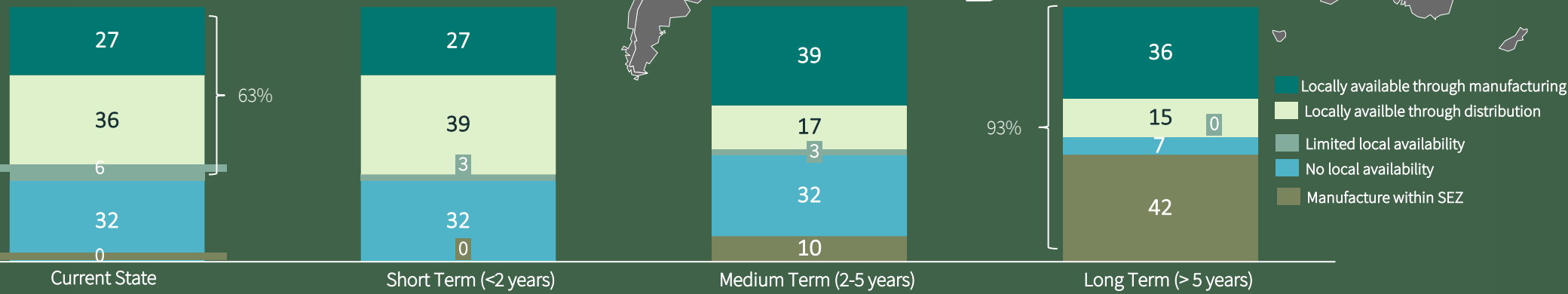
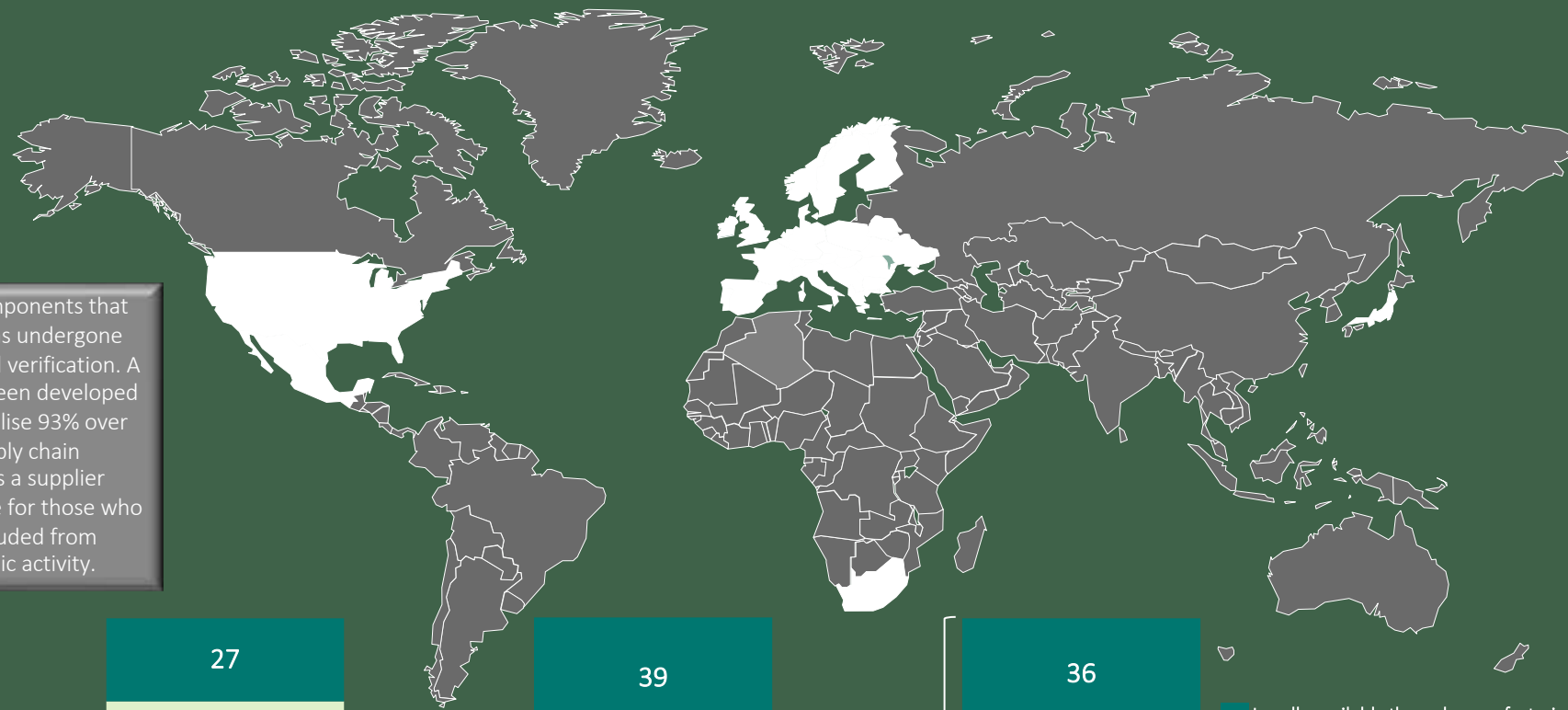


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# LOCALISATION AND SUPPLY CHAIN IS SPREAD AROUND THE WORLD

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Mitochondria's 450 components that make up its Fuel Cell has undergone Supplier qualification and verification. A long-term strategy has been developed charting the way to localise 93% over five years. The supply chain development includes a supplier development programme for those who were previously excluded from mainstream economic activity.

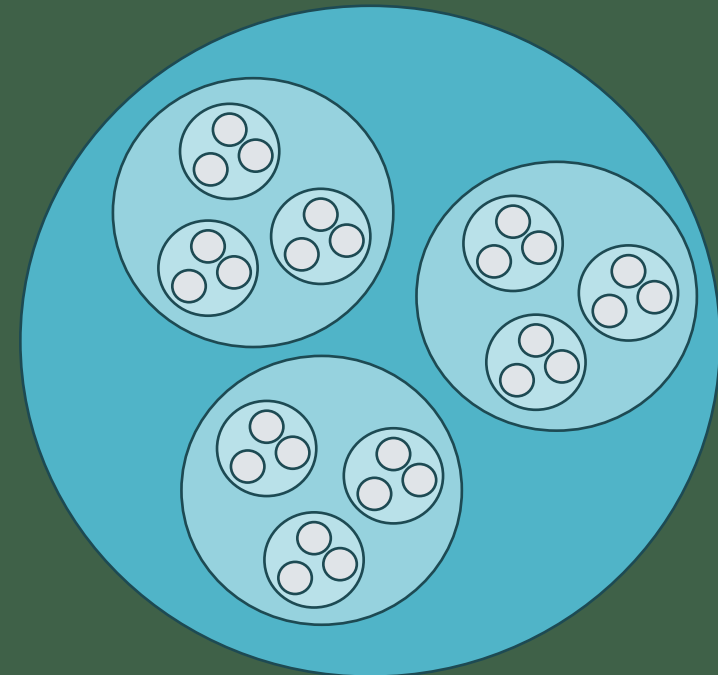


# THE MANAGEMENT PHILOSOPHY OF MITOCHONDRIA IS ROOTED IN NATURE

*Fixed Roles in Hierarchy's vs Dynamic Roles in Holarchies* within organizations  
Business entities are part of an interconnected ecosystem at an economy-wide level



HIERARCHY



HOLARCHY

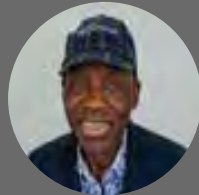
Adapted from Arthur Koestler Theory of Holons  
Source: David Kish. 2020. The Future Of Organizing Is All Around Us



# PROJECT DEVELOPMENT TEAM


Mitochondria has acted in the last five years as a project development company, so the project development team A full complement of staff will be employed when the project company is formed. It is expected that the initial number of people that will be employed will be in the region of between 200 to 400. The current project management team is as follows:

**MASHUDU RAMANO**  
 Entrepreneur, Sustainability Practitioner, MSc in Sustainability & Responsibility with extensive experience in listed and unlisted companies . Former Chairman of Astron South Africa (multi-billion-rand acquisition of Chevron South Africa), Airports Company South Africa, Johnnic Communications , African Harvest, Trade & Investment Limpopo & Platinum Trust of SA Director of Legend Power Solutions (which owns Dedisa and Avon Peaking Power plants), and Executive Director of the Association of Black Accountants (ABASA) & President NAFCOC Gauteng




**PETE WILSON**  
 B.BusSci - Major in Finance

Chevron South Africa, America and Singapore, Director And General Finance Manager, South / Central Africa, Director of US-listed metering company focusing on rural electrification and solar Power




**JAN VAN DER MERWE**  
 B.Eng, M.Eng – Hydrogen and Fuel Cells

More than 10 years of experience in hydrogen and fuel cells. Hydrogen of South Africa Infrastructure (HySA Infrastructure), Hydrogenics Canada (recently acquired by Cummins)



**LUVO VANYAZA**  
 B.Tech, M.Tech and M.Sc – Sustainable Energy Engineering  
 Fine Chemicals Corporation, Afrox Ltd.




**KUTAMA ARIFA RAMANO**  
 Masters in Sports Business, BSc in Physiology & Zoology  
 7 years' experience in business administration and event management. Intersection NYC, Laureus Sport For Good (New York Office) and locally at the Absa Cape Epic .




**NKOSIKHONA NZIMANDE**  
 B.Sc and M.Sc Chemistry

Energy Storage R&D – Synthesis and fabrication of rechargeable battery



**OTSHEPENG MORAKA**  
 B.Sc and M.Sc degrees in Electrical Engineering  
 Multi-industry experience, Denel Dynamics, Komatsu



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# STEERING COMMITTEE MEMBERS FROM THE IDC, DBSA & DTIC



MAHANDRA ROOPLALL  
IDC , Chair of SteerCo

INDUSTRY STRATEGIST AND PLANNER  
Presently developing the National Hydrogen  
Commercialisation Strategy for South Africa



FA MULUMBA  
DBSA, SteerCo

PRINCIPAL INVESTMENT OFFICER



JUSTICE NGWENYA  
DTIC

ANNMARIE BUCK  
IDC , SteerCo

SENIOR PROJECT DEVELOPER  
Extensive experience in large projects from  
concept, verifying feasibility through to  
commissioning.

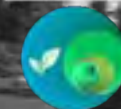


LUCKY SIMELANE  
DBSA, SteerCO

PROGRAM/PROJECT MANAGEMENT AND  
TECHNICAL ADVISOR



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*“Hydrogen is today enjoying unprecedented momentum. The world should not miss this unique chance to make hydrogen an important part of our clean and secure energy future.”*

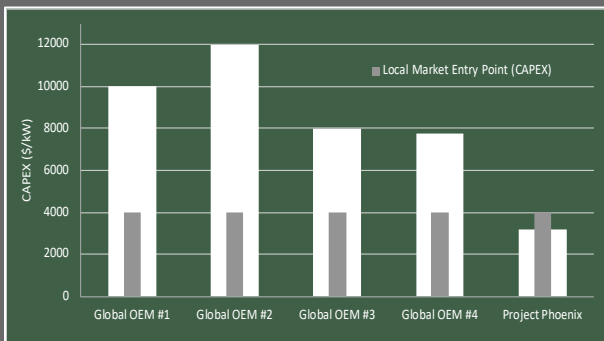
Dr Faith Birol, Executive Director International Energy Agency

03

## PRODUCT OVERVIEW

Welcome to the era of  
Decentralized, Distributed,  
Reliable, Clean and  
Affordable Power  
Generation!

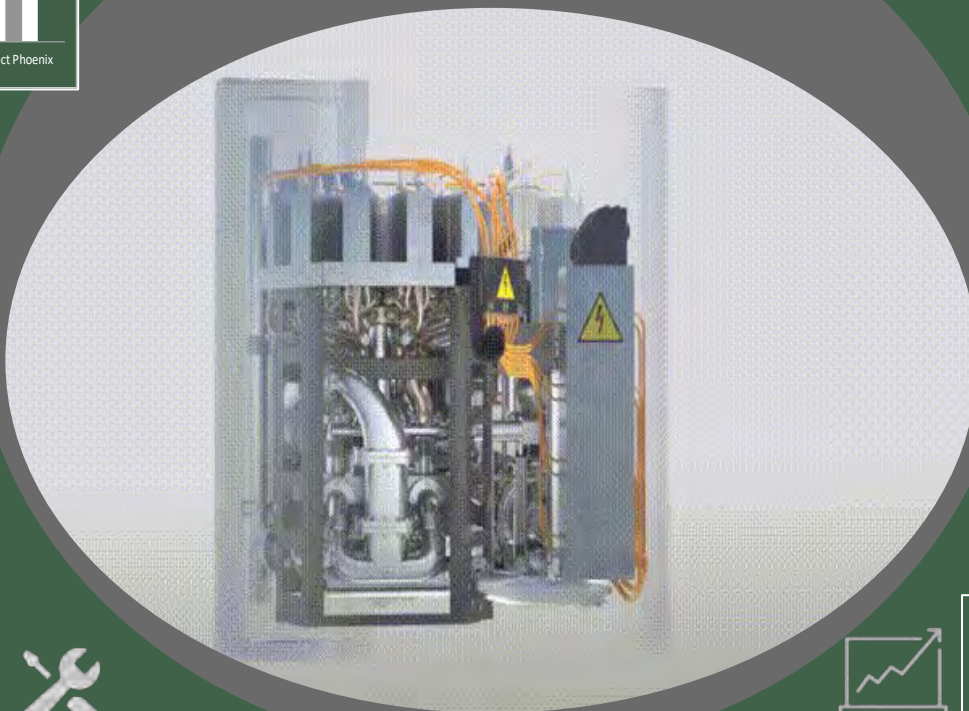
AFFORDABILITY



INTELLECTUAL PROPERTY

All Intellectual Property developed and owned by Mitochondria

PRODUCT OVERVIEW



SYSTEM DESIGN

World-leading Stack Supplier  
State-of-the-art balance of plant  
Small Footprint

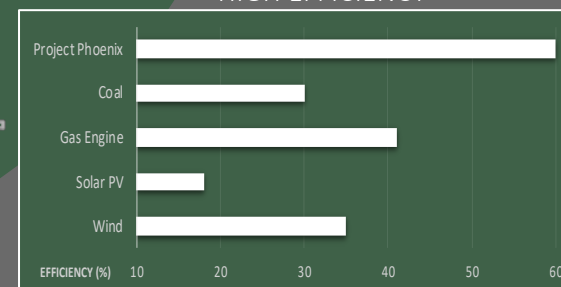


PATHWAY TO NET-ZERO

Up to 70% CO2 emission reduction with natural gas & LPG, 100% with hydrogen  
Almost zero Nox, Sox and particulate matter



HIGH EFFICIENCY



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SAFETY

Safety according to IEC and SANS standards  
CE certification



RELIABLE AND SCALABLE

Leading Availability Factor  
Stackable to multi-MW  
Small footprint



MAINTENANCE

Efficient and clean electrochemical process  
Lower maintenance vs combustion technologies  
20-year system lifespan

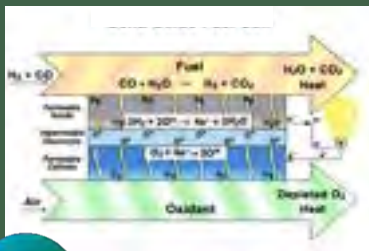


Your always safe, reliable & trusted provider of high electrical efficiency (60% plus), better return on energy investment, affordable, climate-friendly, low maintenance, highly-rated, demand-driven on-site flexible & regenerative baseload power, heat and water.

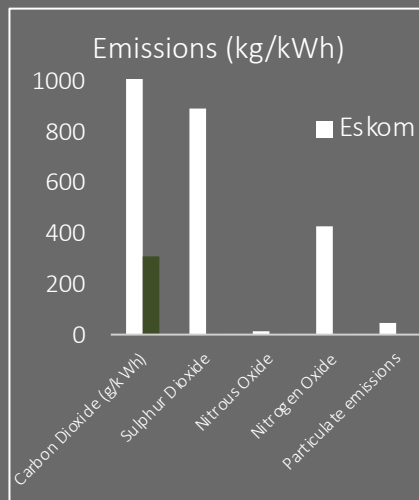
## HOW A FUEL CELLS WORKS



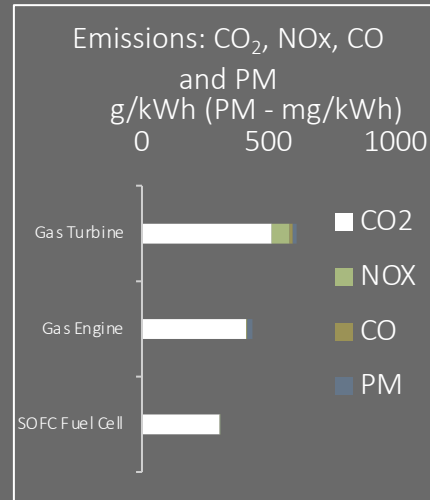
Fuel is supplied and electricity and heat is produced - it is that simple but there is much more to the electrochemical process in a fuel cell. The energy carrier hydrogen and oxygen react with each other between two electrodes, producing electricity, heat and water. This process generate sustainable energy when operated on hydrogen. Our fuel cell system can also operate on natural gas and LPG which are converted to hydrogen in the fuel cell's reformer - a perfect transition technology. It is important to know is that when it operates with natural gas or LPG, carbon emissions are reduced by up to 70% compared to power generation from coal utilised by Eskom.



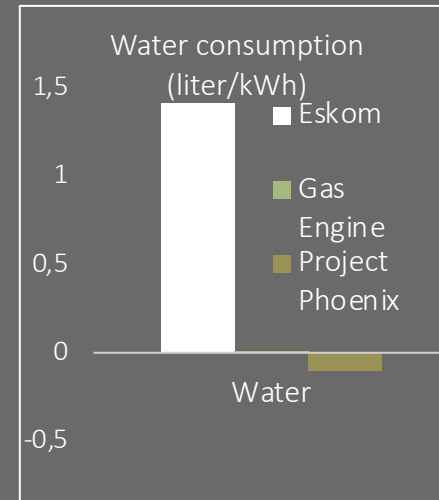
## PROJECT PHOENIX VS ESKOM



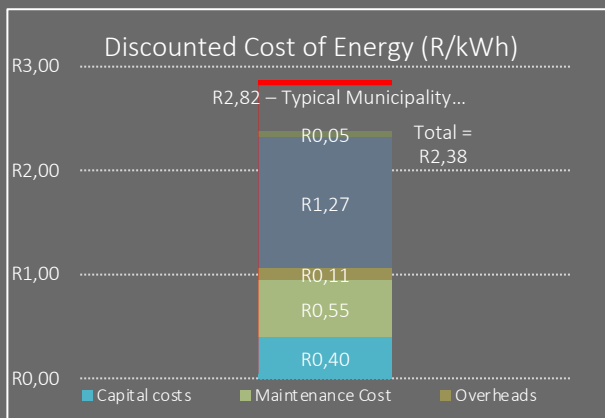
## PROJECT PHOENIX VS GAS ENGINES & TURBINES



## PROJECT PHOENIX VS ESKOM VS GAS ENGINE



## COST COMPETITIVE POWER GENERATION



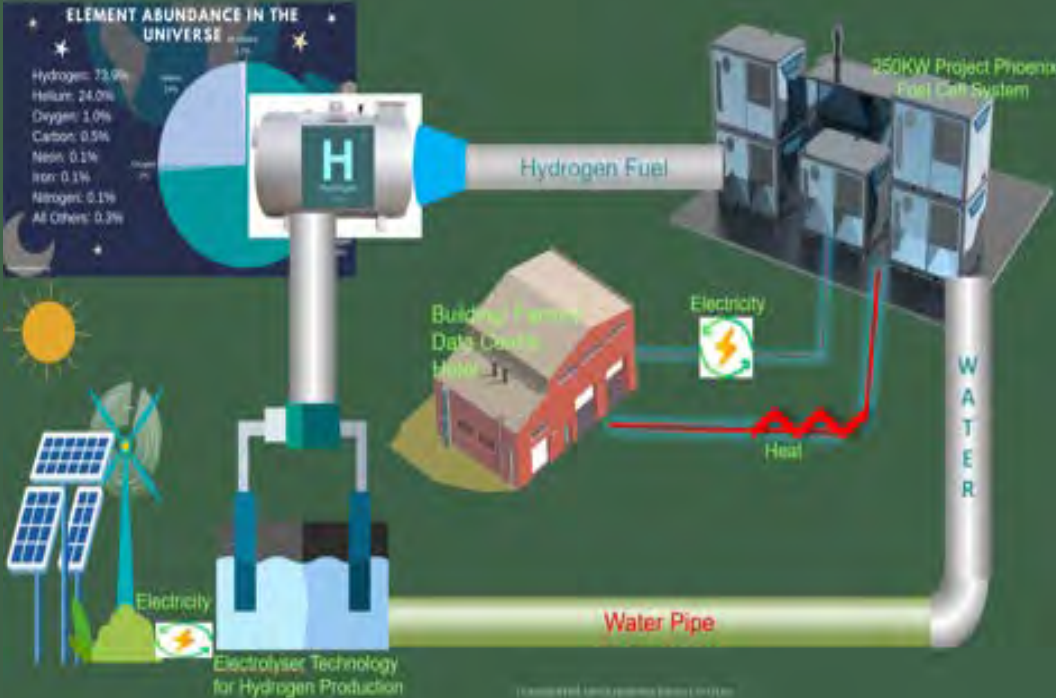
## NEW INDUSTRY FORMATION ENABLER

- Manufacturing capability in the hydrogen and fuel cells
- Hydrogen and fuel cell Supply Chain Development
- Project Phoenix provides a platform for South African and global suppliers to enter the hydrogen and fuel cell supply chain
- Project Phoenix will be globally competitive
- Potential for significant foreign earnings



# COMPARING POWER GENERATION TECHNOLOGIES

## THE MITOCHONDRIA SOLUTION: REGENERATIVE POWER GENERATION OF THE FUTURE



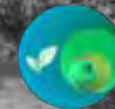
## THE CURRENT POWER GENERATION TECHNOLOGY



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*“These are exciting times for the introduction of new technology into SA particularly considering South Africa’s energy constraints.”*

Industrial Development Corporation of South Africa Limited (IDC)

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# MARKET OVERVIEW

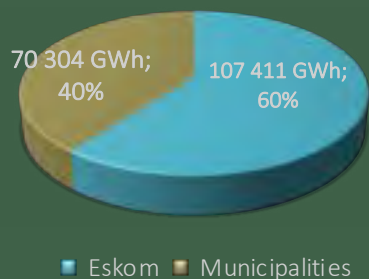
# SOUTH AFRICAN ENERGY LANDSCAPE

The South African energy landscape is rapidly changing, giving credence to the just energy transition (JET) underway. Load shedding is a consistent feature in the economy and according to Eskom, load shedding will last for at least another five years due to a shortfall of 4000 MW caused by Eskom's fleet of weak power generating capacity as shown below.

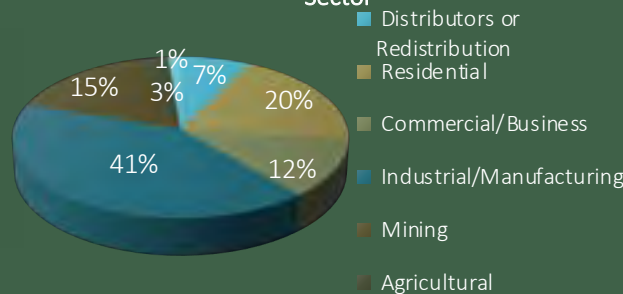


South Africa's electricity consumption is 117 715 GWh\*, which translates to an average demand of 20,3 GW. The total number of electricity users is 14 091 116. The current consumption in South Africa is roughly 40%/60% distributed between Municipalities and Eskom respectively. Combined Commercial, Business, Industrial, Mining and Redistributors account for more than 75% of the consumption.

South African Electricity Consumption (177 715 GWh)

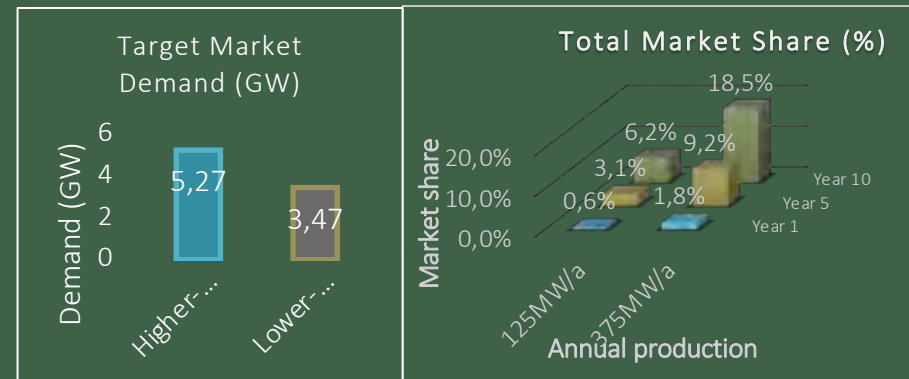


South African Electricity Consumption by Sector



# MARKET SURVEY AND TARGET MARKET

The data collected and analysed from the independent consultant performing an energy survey included 707 participants and an energy demand of 473 MW covering the majority of regions and sectors in South Africa.



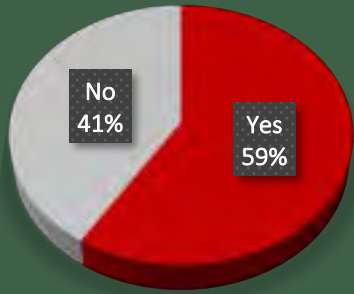
Using the data, the target market for the fuel cell systems was calculated with an estimated target market lower end of 3.47 GW and the higher end is 5.27 GW. This further supports Mitochondria's decision to produce 125 MW/a of fuel cell systems (in the facility) based on a one-shift per day and a 250 MW/a with two-shift model. Over 10 years a 125 MW/a SOFC production will yield Mitochondria a 6.2% market share. A surge capacity production of 375 MW/a if viable and further expansion strategy would be to duplicate the facility that will allow for a 750 MW/a up to 1125 MW/a production capacity.

\* In 2019

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## ACTIVELY CONSIDERING ALTERNATIVES



Considering the current energy status in South Africa, 59% of the participants are currently considering alternative providers for electricity.

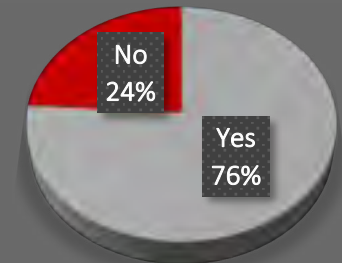
*Note: this response was before Mitochondria was introduced as an alternative energy supplier.*

## ENVIRONMENTAL AND SUSTAINABILITY



More than three quarters of the survey participants indicated that the environmental impact of their energy consumption is a concern.

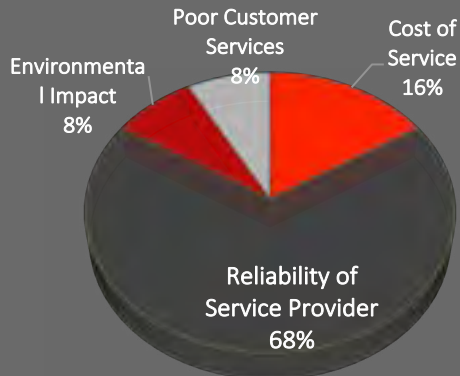
*Mitochondria's fuel cell system fulfills at least 11 out of the 17 Sustainable Development Goals (SDG's) of the United Nations. The SDG's provides a blueprint for peace and prosperity for people and the planet, now and into the future.*



### ACCESSIBLE MARKET OVERVIEW

In order to assess the appetite of our accessible market towards Mitochondria's fuel cell system, an independent survey was conducted to understand the challenges and driving factors for a change in the market.

## RELIABILITY OF ELECTRICITY



Participants indicated that the **reliability** of their current service provider is the largest factor that will cause them to change energy service provider.

*Note: Our fuel cell system has one of the highest availability factors among generating technologies.*

## TARGET MARKET

Mitochondria's target market is based in the major metros in South Africa, with its primary focus on medium-to-large electricity user.

The customer is already looking for sustainable and clean energy technologies that reduce the effects of load shedding on business operations and reduces their carbon footprint.

Mitochondria is focused on interacting with the decision-makers of organisations.



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**Pete Wilson**  
[pete@mitochondria.co.za](mailto:pete@mitochondria.co.za)

[www.mitochondria.co.za](http://www.mitochondria.co.za)

**CONTACT**