

Pillars and enablers of a hydrogen economy in South Africa

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Presentation Outline

- 1 Introduction and Background**
- 2 South Africa's opportunity and value proposition
- 3 GH Commercialisation Strategy
- 4 Competitive Supply
- 5 Funding and Project Support
- 6 Key Enablers
- 7 Way forward – summary and conclusion

Introducing IDC

ESTABLISHED	Established in 1940 by the Industrial Development Corporation Act, 22 of 1940
TYPE OF ORGANISATION	State-owned Entity & Development Finance Institution
OWNERSHIP	Fully owned by the South African government.
MANDATE	To maximise development impact through job-rich industrialisation, while contributing to an inclusive economy and ensuring long-term sustainability.
TOTAL ASSETS	ZAR 143,7billion (31 March 2021) ... =USD 9.35bn
FUNDING	ZAR 6.3 billion disbursed (year ending 31 March 2021) = USD 410m
GEOGRAPHIC ACTIVITIES	South Africa and the rest of Africa
NUMBER OF EMPLOYEES	804
OPERATIONAL FOOTPRINT	Head Office in Sandton & 22 Regional/Satellite offices





A solid historical base supports commercialisation

1

2007

Development of the National Hydrogen and Fuel Cell Technology Strategy by the Department of Science and Innovation and approval by Cabinet

2

2008-2018

Various demonstrator projects include:

- underground fuel cell powered mining locomotive;
 - solar-to-hydrogen system;
 - battery and fuel cell golf cart;
- fuel cell generator providing lights for the UWC Nature Reserve;
- fuel cells for power storage for homes and cellular phone tower base stations;
 - a Hydrogen refueling station;
 - fuel cell powered forklift,
- green Hydrogen fuel cell system with on-site production and storage;
 - a Hydrogen in Mining test facility;
 - Liquid Organic Hydrogen Carriers;
- the use of PGM catalysts for the production of Hydrogen and
- HySA demonstrated a 2.5kW fuel cell system at Poelano Secondary School

3

2020

The DSI, Hydrogen SA and North West University initiate a process with the South African government to develop a Hydrogen Society Roadmap.



Recent development accelerates progress

4

JUNE 2021

Minister Ebrahim Patel sets up GH panel. Presidency announces that GH has been identified as the first of five 'Big Frontier' strategic investment opportunities

5

SEPTEMBER 2021

Cabinet approves the Hydrogen Society Roadmap (HSRM) developed by the DSI

6

NOVEMBER 2021

At COP 26 in Glasgow, Scotland, South Africa mobilizes funding support for the country's decarbonization

NCEDA releases GH Strategy at COP26

7

FEBRUARY 2022

The HSRM is released to the public. The GH panel completes the drafting of the GH commercialisation strategy for South Africa

8

MAY 2022

Anglo American launches nuGen Zero Emissions Haulage Hydrogen Powered mine truck at Mogalakwena Mine

How IDC is driving a commercial GH Economy

Partnerships

- Various industry partnerships
- Alignment within government
- Technology suppliers
- Financiers
- Labour
- Research organisations
- NGO's / NPOs

Research

- Facilitate research on behalf of Green Hydrogen Panel
- Other technoeconomic studies
- Socio economic studies
- CSIR / DSI / GIZ

Value chain approach

- Address “chicken and egg” scenario
- Identify areas which are most valuable and are sources of competitive advantage
- Identify areas that need to be improved and where should we focus efforts to unblock bottlenecks
- How to position our country to compete in the global economy
- How to engage the different market sectors

Industry Planning

- Chair and secretariat of the Green Hydrogen Panel
- Play a role in Presidential Climate Change Commission
- Development of industry action plans to address the value chain activities and enablers

Investment in Bankable Business Ventures

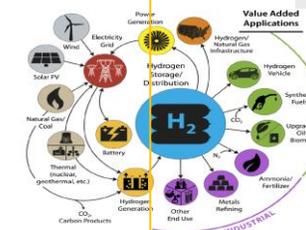
- Various opportunities across the value chain that are ready to moved into operations / expand existing facilities etc.

Investments in Project Development

- GH and green chemicals exports
- Local mobility projects
- Localisation projects
- Infrastructure development
- Decarbonisation of heavy industries

Localisation

- Renewable energy localisation (solar, wind & storage)
- PGMs
- Fuel Cells and Electrolysers
- Battery mineral mining



Examples of focus areas

1. Raw materials for hydrogen value chain equipment
2. Components & equipment for hydrogen production / fuel cells
3. Renewable energy to produce hydrogen (wind, solar, storage)
4. Green hydrogen and green chemicals production (PtX)
5. Hydrogen storage and distribution (infrastructure and technology development)
6. Hydrogen applications:
 - Mobility (heavy duty vehicle fuel cells)
 - Petrochemicals
 - Heavy industries (e.g. steel and cement)
 - Other

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The Opportunity for Green Hydrogen

The GH economy presents new economic, skills, employment and community opportunities for South Africa



Global Opportunity

Hydrogen will play a significant role in the transition to a net-zero energy system.

It will establish SA as a future energy market global trader, securing foreign direct investment, earning foreign income and creating economic growth and development

Import Markets for GH to 2050 will be the EU (2050: 11-15 Mt GHpa); Japan (2050: 5 to 10 Mt GHpa); South Korea (2050: 1.0 to 1.2 Mt GHpa) and the United Kingdom (2050: 0.5 to 0.7 Mt GHpa).



Competitiveness

South Africa's natural endowments of Land, Wind, Solar, Oceans and Green Minerals and existing Petrochemical base can be leveraged.

Together with innovations in the hydrogen sector, a robust financial system, globally recognised renewable energy programme and inclusion of GH as a key element of the Government's energy transition plans

South Africa's clear differentiators are proprietary Fischer Tropsch technology and resources of platinum group metals (PGMs)



Just Transition

The just energy transition focuses on the transition of South Africa's energy sector as the country navigates the shift away from coal towards cleaner sources of energy

The just energy transition requires that the transition is equitable to all communities and is better for our people and planet.

Transitioning away from fossil fuels will require the training and re-skilling of communities reliant on fossil fuel industry.



Decarbonisation

- GH will be the global clean fuel of the future and critical to SA decarbonising our economy and ensuring the competitiveness and sustainability of our industries.
- In a global Net Zero environment, "dirty" economies will increasingly be financially penalised

South Africa's Green Hydrogen Value Proposition

A unique combination of resources and capabilities will enable South African to compete in multiple areas.
 South Africa will differentiate itself by using proprietary **Fisher Tropsch technology** to target the **sustainable aviation fuel** market and using **PGM resources to target fuel cell and electrolyser manufacturing**.

Global leader in **Platinum Group Metals Mining**
 (Platinum, Iridium and Rhodium)



Multiple water sources (from mining, sea and fresh water)



Renewable Energy endowments and a rapidly developing Renewable sector



Established petrochemical sector & technology base including **proprietary Fisher Tropsch technology** critical for power to liquids



Geographic positioning



Relatively well developed infrastructure



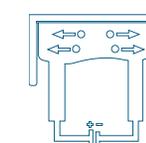
Export to EU, Japan, South Korea, UK



Decarbonization of local industry e.g. steel, petrochemicals, mining



Local and global sustainable mobility e.g. fuel cell buses, trucks and associated infrastructure



Manufacture of equipment and components e.g. fuel cells and electrolyser

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Commercialisation leverages the Hydrogen Society Roadmap



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA



the dtic

Department:
Trade, Industry and Competition
REPUBLIC OF SOUTH AFRICA

Hydrogen Society Roadmap

GH Commercialisation Strategy

The strategy for Commercialisation, aligns with the objectives and outcomes of, and builds on the strong foundation of the Hydrogen Society Roadmap



The roadmap for commercialisation provides detail and granularity differentiating between short and long term actions by public and private sectors

Commercialisation Strategy Pillars

The strategic actions are based on six key pillars and reliant on enabling policies and regulation.

SA Hydrogen strategic vision

5-Year phased planning of Strategic Pillars to 2050

Export markets

Domestic markets

Investment &
Finance

Economic
development

Local industrial
capability

Just Transition

Policy and Regulation

Role of the commercialisation strategy :

- National coordination / shared vision
 - Provide policy certainty
 - Encourage investors
- Guide decision makers (government, private)
 - Ensure proactive industry development

Strategic objectives to be considered in pursuit of South Africa's GH vision.

- **Export Markets:** Secure global market share and competitive trade position
- **Domestic markets:** Decarbonise SA economy; energy security and reliability
- **Investment & Finance:** Mobilise foreign direct investment, domestic funding and low-cost green finance
- **Economic and socio-economic** Maximise development impact (incl. skills and economic development and social inclusion)
- **Local industrial capability** Local industrial capability and value chain linkages e.g. Raw Materials & equipment
- **Affordability of a Just Transition** Maximise job creation and alternative options for potential job losses
- **Regulatory Environment:** clear enabling investment environment

Commercialisation Vision : Developing a globally competitive, inclusive and low carbon economy by harnessing South Africa's entrepreneurial spirit, industrial capability, strong financial sector and natural endowments

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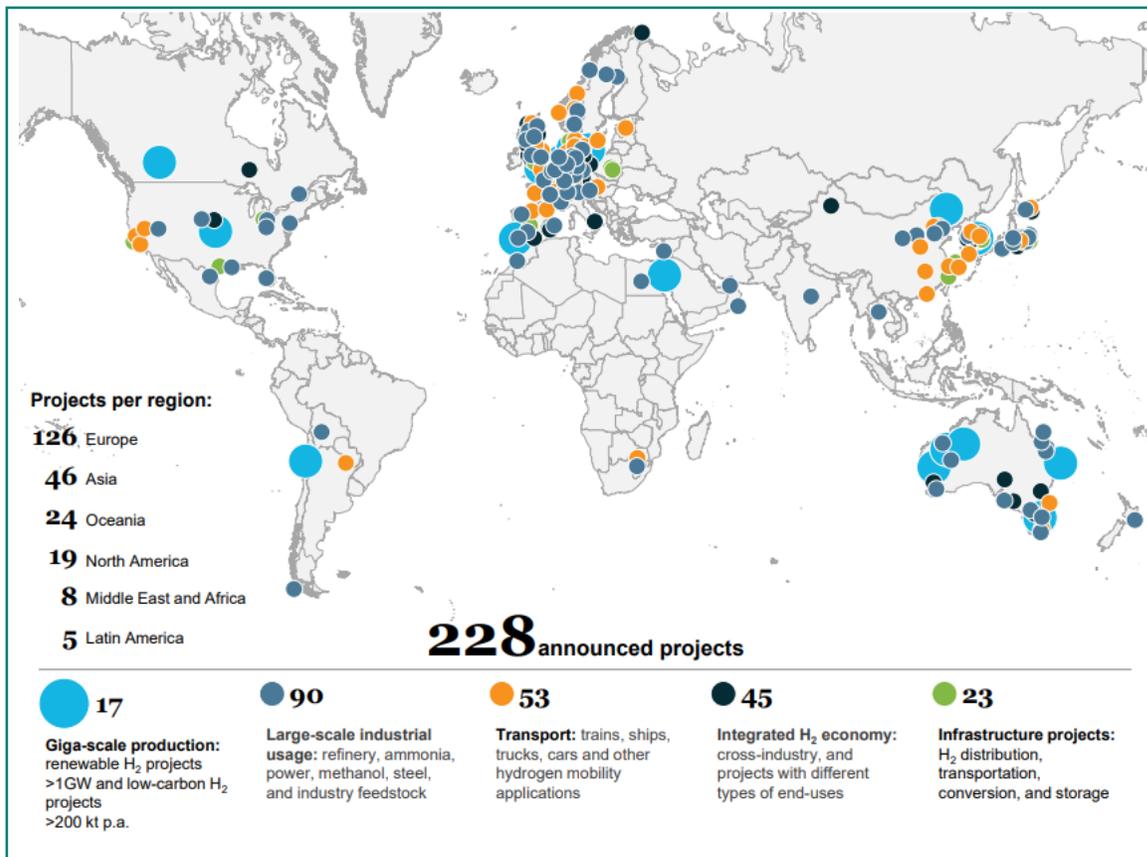
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Competitive Supply: Global developments

Globally countries and private companies are developing strategies for the commercialisation of the sector.

Global hydrogen projects across the value chain

Source: Hydrogen Council & McKinsey & Company – Hydrogen Insights 2021



- More than 30 countries have published a hydrogen roadmap (net importers & exporters) and over 200 hydrogen projects have been announced with governments committing to over \$70 billion in public funding
- Themes of strategies:
 - Early investment support to scale assets and infrastructure required to meet desired targets
 - Opportunities for sector-coupling.- optimising gas and electricity infrastructure to deliver low-cost GH
 - Seeding local market focus areas; including setting of national standards and priorities
 - Commercial model assessment inclusive of opportunities and the role of the state
 - Policy and detailed regulatory frameworks
 - Focus on Research and Development to improve technologies and identify initial projects
 - A social licence assessment – looking at the holistic impact of the new GH market
 - International strategies on partnerships, including bi-lateral MOU's and agreements

Competitive Supply: South Africa's competitive advantages

South Africa is well positioned to produce GH thanks to three structural competitive advantages



SA with large scale, high quality RE potential

- **Power sector decarbonization alone requires ~150GW of solar PV and wind** installed capacity by 2050
- **Green H₂ opportunity will need additional ~100GW of RE capacity** (with 2-10GW by 2030)
- **REDZ¹ alone can hold 900+ GW RE capacity** with premium load factors
- **Average load factors in SA amongst the best in the world** and on par with major competitors like Chile, Saudi and Australia



Sufficient land and synergies in solving for water security

- Just **1% of SA land area** (1.1MHa) would be sufficient to produce **10Mt of green H₂**
- **SA with vast land available**, with ~5.4 MHa in REDZ alone (areas not in competition with agriculture or settlements)
- **Reducing water requirement** (10Mt/yr. of green H₂ production is only 31% of current power sector use in coal-based generation), **and increasing water security** making financially viable desalination plants at the coast (desalinated water cost is a fraction of a premium commodity like GH₂ - ~\$0.01/kg H₂)



Unique expertise for beneficiation into e-Fuels

- **Proprietary Fischer-Tropsch tech**—lacking in other countries (critical for Power-to-Liquid)
- **Existing assets and knowledge** (e.g., multiple Fischer Tropsch and steel facilities) allow for local beneficiation of green H₂ and enhances potential for large scale local demand
- **Opportunity to capture portion of global export market** for e.g., green ammonia/methanol/jetfuel

Competitive Supply: Cost of production drivers

Hydrogen is currently not cost competitive when compared with other sources of energy but it is globally anticipated that the cost will reduce to facilitate improved competitiveness

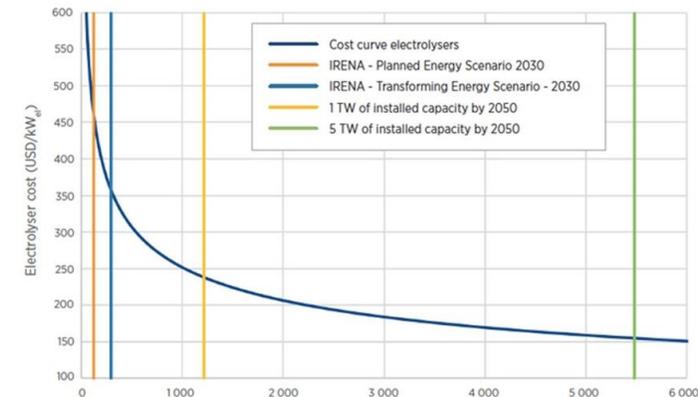
Renewable Energy Power Prices declined 67% for Solar and 49% for Wind since 2012

Renewable Energy Price - Bid Window (BW) 1 to 5 (US\$ cents)



Between 2011 and 2021, four Bidding Windows through competitive tenders resulted in more than US\$ 20 bn (R320 bn) of investment in renewable energy generation capacity,

Learning rates and investment in technology will see similar price declines for electrolyzers



Potential cost decrease for electrolyzers based on learning rates and costs achieved by deployment in IRENA scenarios 2030 to 2050.

Source: International Renewable Energy Agency (IRENA) Analysis

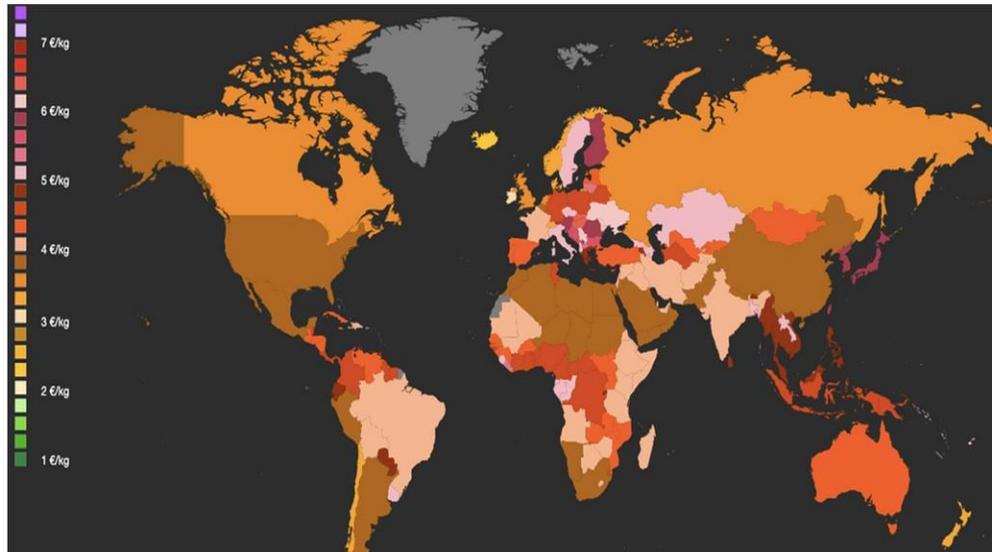
- A combination of cost reductions in electricity and electrolyzers, together with increased efficiency and operating lifetime, has the potential to deliver 80% reduction in hydrogen cost over time
- Targeting projects with scale will contribute to equipment cost reductions by aggregating demand

Competitive Supply: South Africa's long term cost of production

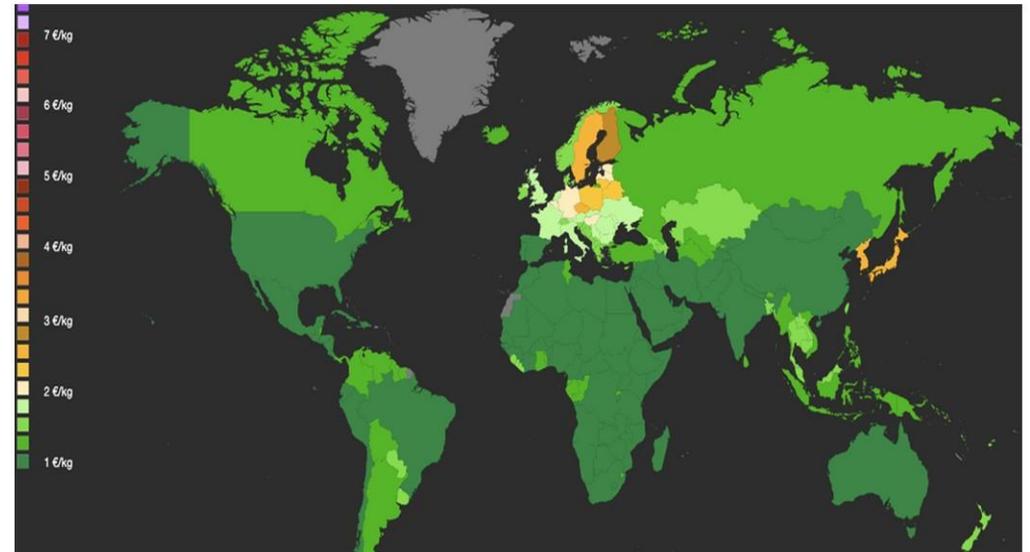
SA GH could approach the \$1/kg GH mark by 2050, equivalent to indigenous low cost energy, making South Africa **one of the competitive industrial economies**, however South Africa will differentiate itself by using proprietary Fisher Tropsch technology to target export of sustainable aviation fuel and will manufacture electrolyzers and fuel cells using PGMs available locally

Levelised Cost of Hydrogen (LCOH) comparable with the lowest cost producers in the world

Global Green Hydrogen Pricing - 2025*



Global Green Hydrogen Pricing - 2050*



*PwC research (2021) | based on an analysis of various renewable energy sources and electricity generation / hydrogen equipment cost reductions worldwide

- Although far from the GH importing markets in Europe and Asia, South Africa has the potential to make up the cost differential through greater efficiency and government support programmes.
- In 2025, the initial focus will be on the export of GH at competitive prices as domestic use will not have reached commercial parity with local fuels. As GH prices decline, a broader domestic transition will unfold.

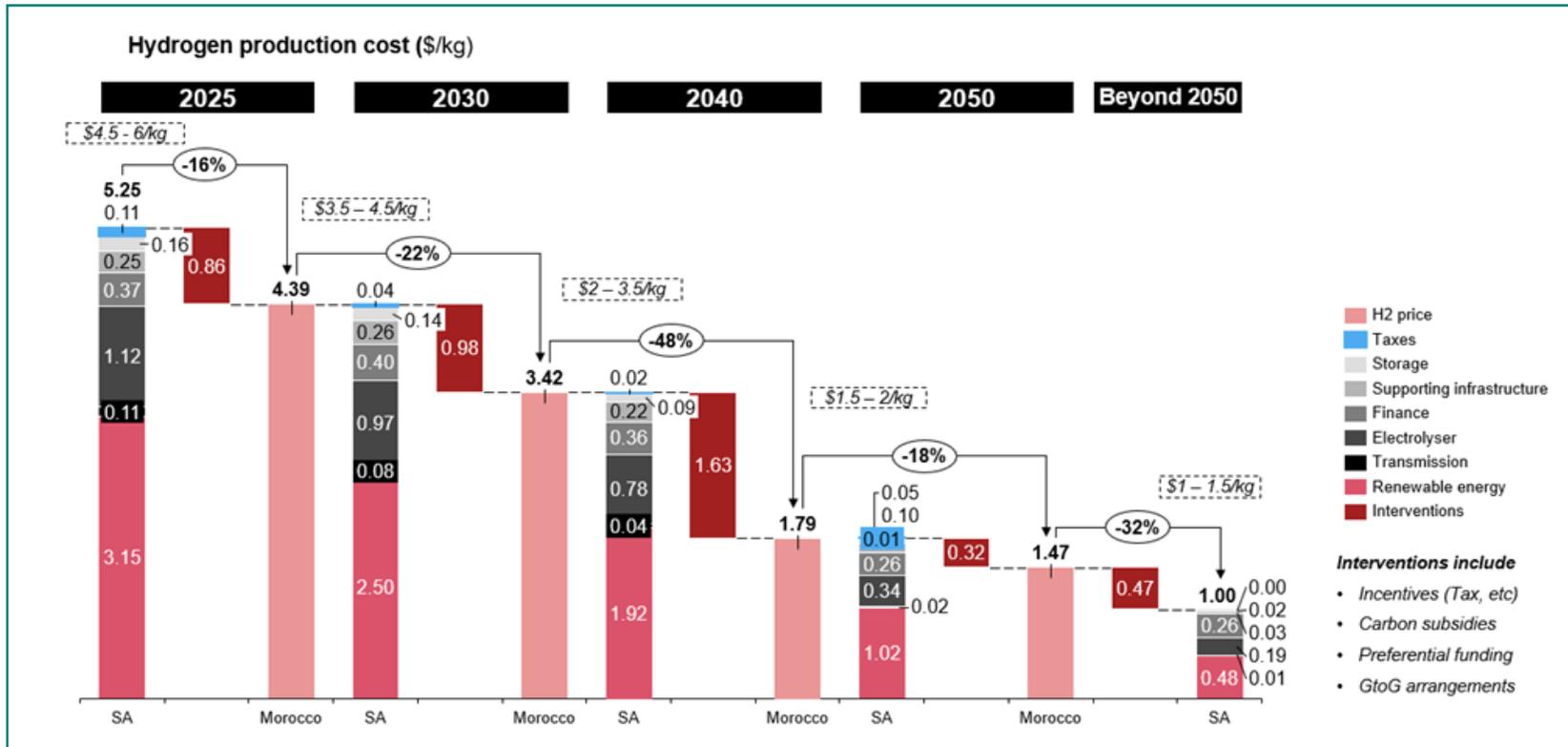
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Cost Levers

The cost reduction path can be influenced by a number of levers including taxes, supporting infrastructure, funding costs, electrolyser and transmission costs. Development of a detailed master plan and integrated value chain design will ensure our GH development remains globally cost competitive

Measures to Improve Competitiveness and Possible Effects on Price (2030 - 2050)

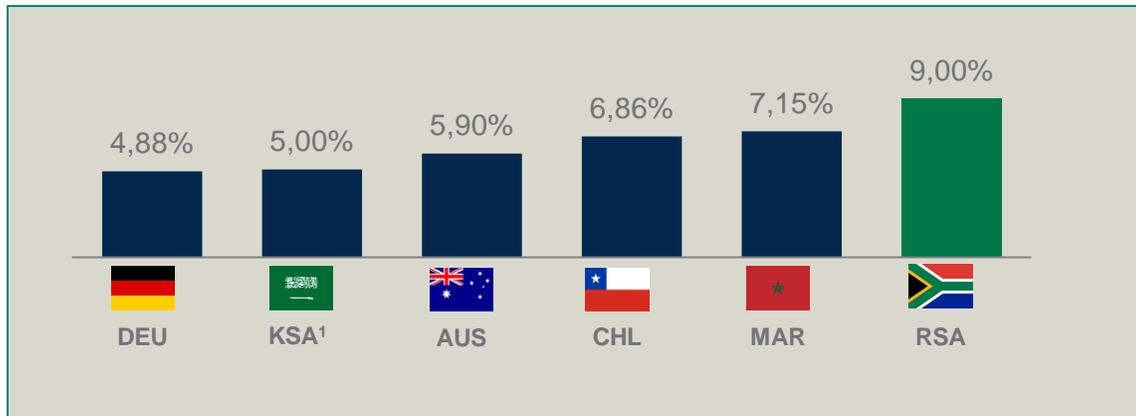


- South Africa will face significant competition for the European Union market from Morocco, Chile and Ukraine, who have already announced EU initiatives for GH.
- Focusing on the hydrogen-supportive policies and creating a regulatory framework that encourages cost competitiveness will allow South Africa to play to win in the global GH landscape.
- The graph indicates the different cost component levers that could facilitate improved competitiveness for South Africa, if compared to Morocco

Cost of capital as a means of comparative advantage

Cost of capital in South Africa is a key constraint that if addressed can provide a comparative advantage

Cost of capital comparison¹



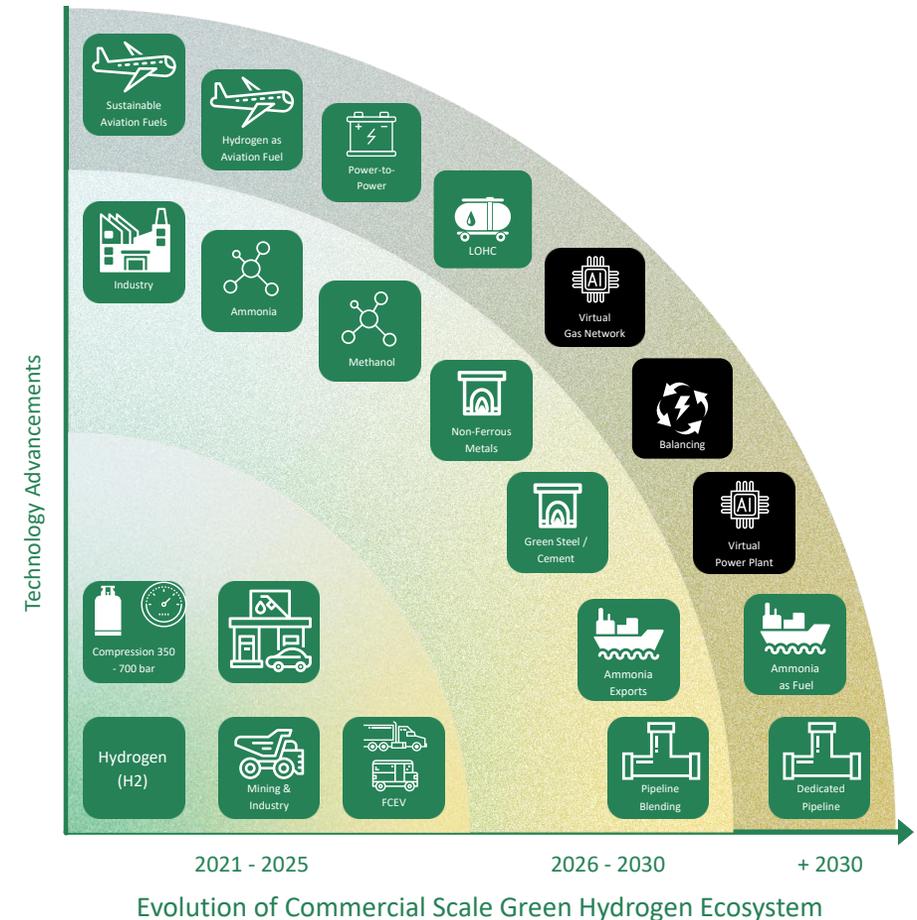
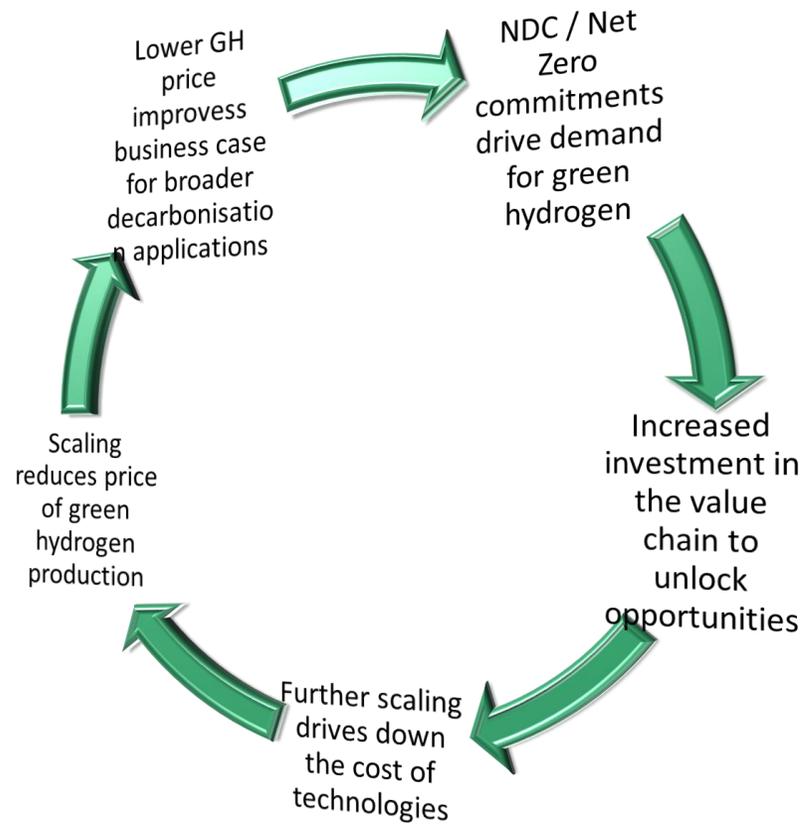
Three financing instruments are needed to improve the financial viability of projects:

- Grants: Decreases total capital burden of a project to produce H₂
- Concessional debt: Varies project WACC which acts as a discount rate
- Contract-for-Difference: Price difference between green hydrogen / chemicals and conventional grey hydrogen / chemicals will be subsidized

¹ Based on a bottom up calculation from first principles using a mixture of debt and equity. German and KSA assumed highly leveraged and the remaining countries medium leverage.

Demand-driven Commercialisation: Value Chain Focus

Declining GH prices will unlock opportunities across key sectors to decarbonise industry



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Key Enablers: (ii) Regulatory & Policy Framework

SA does not currently have an explicit regulatory framework aimed at supporting or regulating the development of a GH economy and will need to leverage existing policies to support GH industry development

The key regulatory recommendations are as follows



Prepare a Regulatory Development Timeline

- Outline detail and timing of regulatory review and introduction of new law and policy.
- Outline regulatory responses for the GH industry including the introduction and phase out of such mechanisms.

Develop regulatory objectives for how the GH industry should be regulated.



- Agree on regulatory objectives to simplify coordination of regulatory responses across government departments.
- Conduct feasibility studies to establish the financial impact of possible GH regulatory incentives.

Develop a set of Regulations specifically aimed at creating enabling environment for GH



- Consider other existing laws and policies that could support the uptake of GH and amend accordingly.
- Develop GH standards and specifications for mobility, production, refuelling, storage, transportation and end-use applications based on international best practice standards.



Key Enablers: (ii) Regulatory & Policy Framework

Development of regulatory measures and incentives for the import and export market production

Export Market

1. Examples include - Introduce measures for SEZs to produce and export hydrogen at a cost competitive price
2. Design and introduce a Guarantees of Origin system to install investor confidence in key import nodes.
3. etc. (more included in GH commercialisation strategy)

Domestic Market

1. Example - Build on existing regulatory tax incentives set out in the Income Tax Act to support the GH value chain.
2. Introduce a single institutional body to expedite licensing processes and facilitate the development of the GH sector.
3. etc. (more included in GH commercialisation strategy)

Key Enablers: (iii) Finance & Investment

Eight distinct challenges identified in SA Hydrogen ecosystem & funding landscape

1 Lack of an integrated policy and gov alignment



- Multiple policies or roadmaps that are not interlinked to provide a coherent and clear path forward for green H₂
- Different departments within government using different strategies to make decisions

2 Green H₂ Supply-demand mismatch blocks offtake



- All projects on IDC-KfW radar have no offtake agreements
- Offtakers don't want to lock-in prices long term since price will go down
- Market unclear on whether green or blue hydrogen will dominate market

3 No clear path on which H₂ projects to invest in



- Lack of strategic catalytic project pipeline and map on how capital stack evolves as project matures

4 Low IRR creates barrier for private funding



- High LCOH makes green H₂ less competitive today
- Low IRR, long payback period compared to other projects
- Current tech maturity increases risk profile for private investors

5 Lack of local blended finance



- Public-private blended finance in RSA green projects is 100% from international sources
- Domestic bias with increase, local blended finance required

6 Insufficient funds for key parts of H₂ value chain



- Synthesis concept dev only has debt today, too high-risk for that stage
- Direct Air Capture, Carbon Capture and Carbon Storage tech in low maturity, but only debt offered for these problems

7 No strategy or funds for distri. & storage infra.



- Only debt financial instrument is offered
No clear path on who will support funding for green H₂ infrastructure
- No plan on how infrastructure will be shared or how "no island grid" policy will change to accommodate new projects

8 Lack of common understanding of 'green'



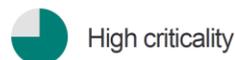
- No global definition of green H₂
- No global method to track green funds and their uses
- Unclear standards for measurement criteria of LCOH
- True cost of tech kept proprietary



Low criticality



Medium criticality



High criticality

Source: KfW/Boston Consulting Group/IDC 2022



Key Enablers: (iii) Finance & Investment

Potential sources of funding will need to be obtained from government, private finance and development finance institutions

1

Government on-balance sheet finance



- **Direct public funding:** includes allocation of taxation revenue, budget surplus, borrowings
- **Green/project bond financing:** Effective means of encouraging development of infrastructure focused on reducing carbon emissions and provides a form of de-risking by providing long-term grant and concessionary funding to an investment

2

Private Finance



- **Traditional private sources of private finance such as** direct equity investments and lending
- **Public-private partnerships:** Combining public and private sector involvement by partnering government with key private stakeholders, including infrastructure developers, renewable energy companies, research institutions, vehicle manufacturers, and infrastructure focussed private equity funds, are key themes in this space globally.

3

Development Finance

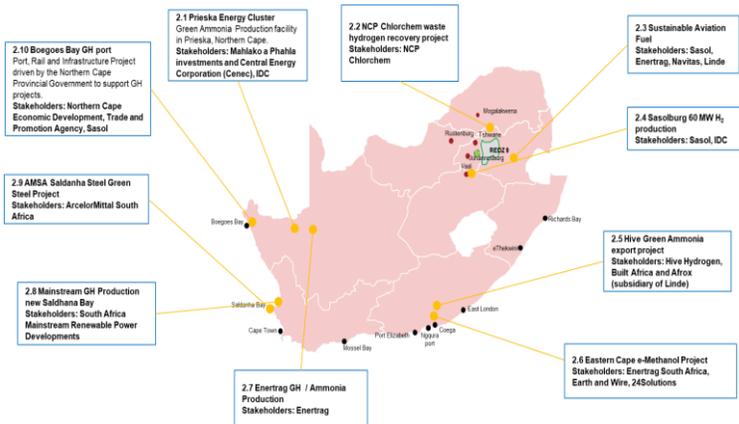


- **Leveraging funding from developed markets:** A number of larger, developed countries have committed funding to support the decarbonisation initiatives of developing countries. Taking advantage of those additional pockets of funding will support the development of larger scale projects locally, which will enhance efficiencies and ultimately reduce pricing.
- **Leveraging funding from export credit agencies:** often used to fund infrastructure projects (especially those in the developing world) in conjunction with, or as an alternative to, more traditional project financing. It enables project companies to obtain more flexible (and often cheaper) financing arrangements. In addition to financing, export credit financiers may also provide insurance, particularly political risk insurance that is either unobtainable or prohibitively expensive in the commercial market place, which incentivises investment by international financiers.
- **Blended finance mechanisms** including on-lending structures from DFIs and subordinated debt

Key Enablers: (iv) Catalytic Projects

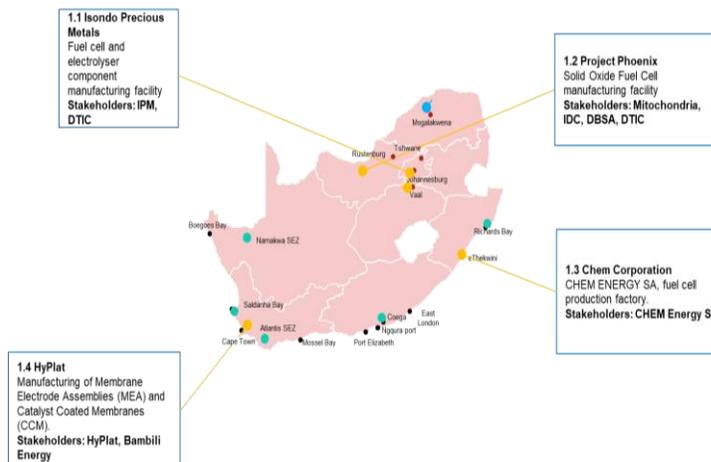
GH Production and Beneficiation Projects

The current strong pipeline of GH, chemicals and green steel projects will support the export focus element of the commercialisation strategy



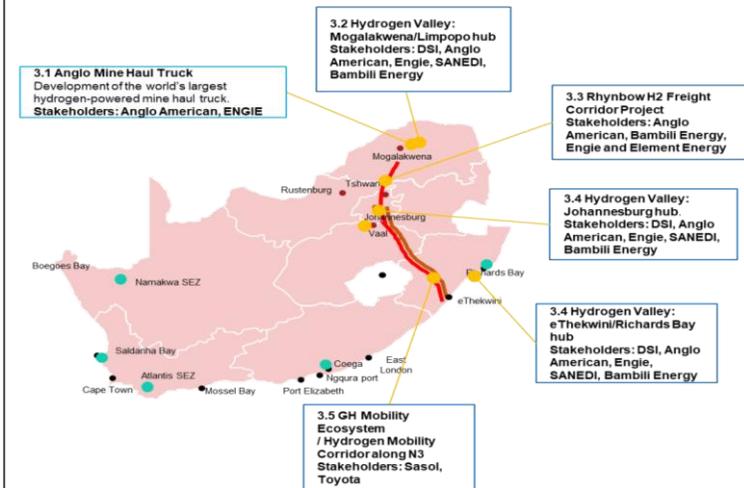
Equipment Manufacturing Projects

The current strong pipeline of equipment manufacturing projects will support the industrialisation element in the commercialisation strategy



Mobility Projects

The current strong pipeline of mobility projects will support the domestic demand stimulation and decarbonisation strategy



Key Enablers: (v) Skills Development

The creation of a hydrogen economy will require a new skill sets as well as an increase in capacity of a productive workforce

Value chain	Localisation opportunity (Priority)	Skills required	Skills sourcing	Government can build local skills capacity by...
Renewable Energy generation	Hydrogen and renewable energy specialists (High)	Circular economy skills	Outsource	<ul style="list-style-type: none"> Incentivising the private sector to support local capacity as they outsource for missing and limited skills. Support educational institutions with development and funding of training programmes focused on the GH industry. Creating financial incentives for the private sector to roll out upskilling initiatives.
		Green architecture and future cities planning skills	Outsource	
		Green engineering and tech skills	Local, but limited	
		Natural capital skills	Outsource	
Electrolysers and Balance of Plant	PGM mining and processing (High)	Technical engineering (renewable, marine)	Local, but limited	Incentivising the private sector to support local capacity as they outsource for technical engineering expertise specific to electrolyser manufacturing
		Recycling of used PGM products (Medium)	Local, and growing	
	CCM* and MEA* electrolyser component manufacture (High)	Circular economy skills Green engineering and tech skills Manufacturing and Assembly	Local, but limited Outsource Local, but limited	<ul style="list-style-type: none"> Incentivising the private sector to support local capacity as they outsource for technical engineering expertise specific to CCM and MEA component manufacturing, fuel cell stack manufacturing, green engineering, and circular economy integration. Supporting educational institutions with development and funding of training programmes focused on the GH industry.
Beneficiated Products	Fuel cell stack and systems manufacture (Medium)	Circular economy skills Green engineering and tech skills Manufacturing and Assembly	Outsource Local, but limited Local, but limited	
	Automotive manufacture (Medium)	Manufacturing and Assembly	Local, and mature	
All	Systems Integration and Operation and maintenance (High)	Circular economy skill	Local, but limited	<ul style="list-style-type: none"> Incentivising the private sector to support local capacity as they outsource for missing and limited skills. Incentivising the private sector to roll out upskilling initiatives to develop growing skills, through funding models and financial incentives Developing ecosystem and research partnerships to diversify mature skills into other segments of the GH value chain and other industries.
		Environmental justice skills	Local, and growing	
		Green career pathways	Outsource	
		Green architecture and future cities planning skills	Outsource	
		Operations management and system integration skills	Local, and mature	
Foundational skills South Africa has developed strong expertise in		Ancillary and support services/ Architecture and Engineering design services/ Business and Management services Construction/ Finance and Legal services/ Information and Communications Technology/ Insurance and Healthcare services Logistics and transport/ Manufacturing and Assembly/ Risk Management/ Skilled labourers/ Technical engineering		

* CCM (catalyst coated membrane) and MEA (membrane electrode assembly)

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GH Commercialisation Summary

The successful implementation of the commercialisation strategy will depend on the execution of the six key elements :

1

PRIORITISE EXPORTS

Target exports of green hydrogen and green chemicals by leveraging on South Africa's proprietary Fischer Tropsch technology and utilising financing support mechanisms including grants, concessional debt and contract for difference to improve the financial viability of these projects

2

STIMULATE DOMESTIC MARKET

In parallel to the export strategy, develop projects to stimulate demand for green hydrogen in South Africa.
Low hanging fruit opportunities to be prioritised to provide confidence in the domestic market.

3

SUPPORT LOCALISATION

Develop local industrial capability to produce fuel cells and electrolyser equipment and components by leveraging on South Africa's PGM resources. Together with demand stimulation this will drive longer term GH price reduction allowing penetration in various sectors.

4

SECURE FINANCING

"Crowd in" and secure funding from various sources and in various forms including grants, concessional debt and contract for differences.

5

POLICY AND REGULATORY

Drive the required policy and regulatory changes required to sustain long term growth of the new hydrogen industry

6

PROACTIVE SOCIO ECONOMIC DEVELOPMENT

Maximise development impact (incl. skills and economic development and social inclusion).

Ensure gender equality, BBBEE and community participation.

Maximise job creation and alternative options for potential job losses.



Conclusion : The path to achieve our Vision for 2050

VISION 2050 – A WELL ESTABLISHED NEW SUSTAINABLE GREEN HYDROGEN INDUSTRY FOR SOUTH AFRICA

- The National Hydrogen Commercialisation will build on momentum of HySA programme and the Hydrogen Society Roadmap to position South Africa as a global player in GH and green chemicals
- The development of this **new green hydrogen industry** will support South Africa’s Economic Reconstruction and Recovery Plan
- Implementation of the action plans should ensure a just transition tackling gender equality and social inclusion, addressing the triple challenge of poverty, inequality and unemployment.
- Stronger partnerships will be built between Government, the private sector and civil society by creating an enabling environment
- Implementation should drive international partnerships while protecting national interest
- South African should be rebranded as a destination for sustainable investment incorporating Environmental, Social and Governance principles



- Projects along the value chain will be developed and implemented over the next 20 year
- “Needle moving” export revenues will be generated
- Policy and regulatory changes driven by Government will be implemented
- Financial support instruments will be sourced e.g. grants, concessional debt and contract for difference
- Incentives to sustain the development of the industry will be developed
- Skills training programs and institutions will be established
- Socio economic development will take fruition, jobs will be created and the just energy transition will be well on its way
- Significant decarbonization will be achieved in South Africa and across the Globe



Thank you !



*Partnering with you.
Growing the economy.
Developing Africa*