AngloAmerican

International Partnership for Hydrogen and Fuel Cells in the Economy

DEVELOPING MARKETS FOR OUR METALS

IPHE INDUSTRY FORUM: INCREASING THE ROLE OF HYDROGEN AND FUEL CELLS IN THE ECONOMY
DECEMBER 5, 2018 – PRETORIA, SOUTH AFRICA

Real Mining. Real People. Real Difference.

ANGLO AMERICAN PLC AT A GLANCE

AngloAmerican

$26.2
BILLION DOLLARS
REVENUE IN 2017

69,000
PEOPLE
WORLDWIDE

WE PRODUCE

DIAMONDS
De Beers
Group of Companies

COPPER

PLATINUM GROUP METALS

IRON ORE, MANGANESE

COAL

NICKEL

WHERE WE ARE

OUR HEADQUARTERS ARE IN LONDON, UNITED KINGDOM

MINING OPERATIONS IN SOUTHERN AFRICA, NORTH AND SOUTH AMERICA AND AUSTRALIA

WE ARE LISTED ON THE LONDON AND JOHANNESBURG STOCK EXCHANGES

ANGLO AMERICAN PLC OPERATIONAL FOOTPRINT

ANGLO AMERICAN PLATINUM - WHY DEVELOP MARKETS FOR OUR METALS?

There are four core segments of platinum demand:

AUTOMOTIVE ~40%

Downside risk from BEVs
Upside potential from FCEVs

INDUSTRIAL ~27%

Industrial demand (e.g. petrochemical, electrical, fuel cells etc.)

JEWELLERY ~30%

Reliant on discretionary consumer spending. Important to ensure Pt stays front of mind for consumers

INVESTMENT ~3%

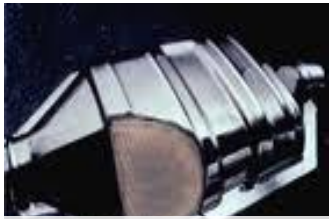
Investor sentiment important to uptake of Pt investment products

Unlike the majority of commodities, PGM demand can be created through our own efforts

Source: World Platinum Investment Council

PGM DEMAND IS CREATED THROUGH INVESTMENT INTO RESEARCH, PRODUCT DEVELOPMENT, COMMERCIALISATION AND MARKETING

Mature applications / demand segments


Autocatalysts


Fuel processing


Glass display


Fertilizer production


Jewellery

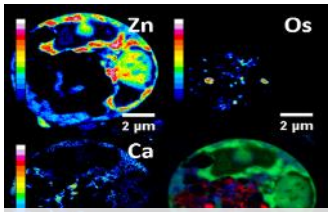

Paint & adhesives

Nascent applications / demand segments

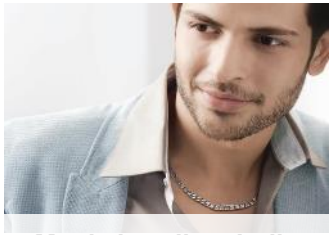

Fuel cells


Food preservation


Energy storage



Cancer treatment

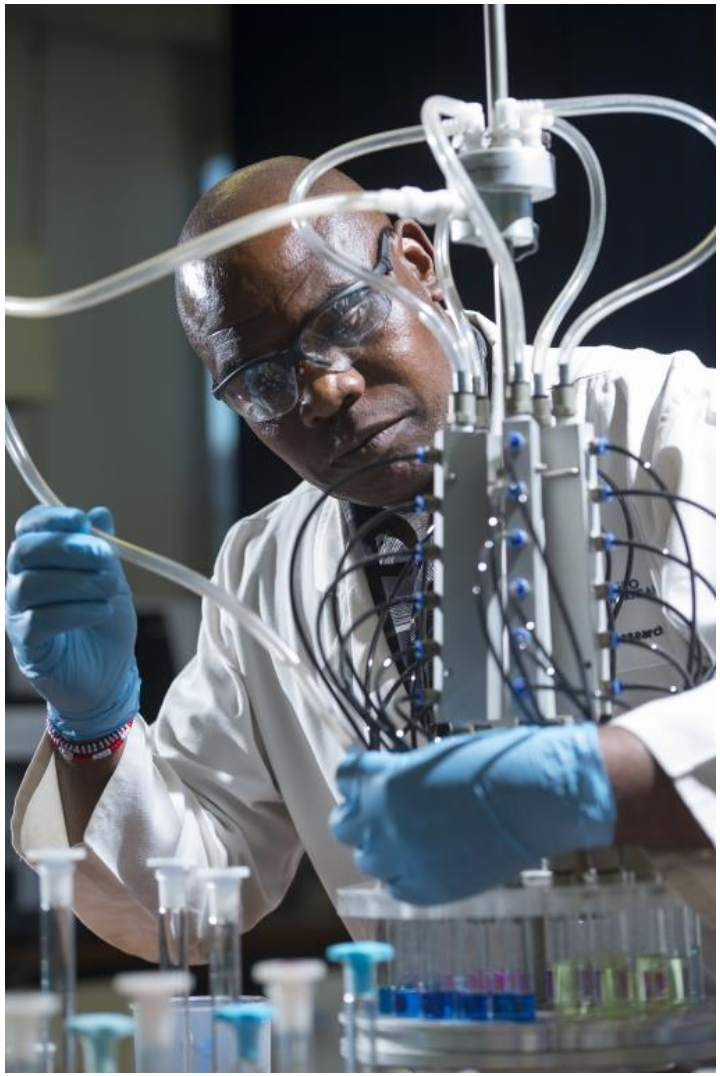

Men’s jewellery India

Hydrogen storage

WE'RE PROACTIVE IN DEVELOPING THE MARKET FOR OUR METALS USING CHANNELS APPROPRIATE FOR EACH DEMAND SEGMENT

Demand segment		Channel
Investment		World Platinum Investment Council
Jewellery		PLATINUM GUILD INTERNATIONAL
Industrial	R&D	AngloAmerican
	Policy advocacy & comms	AngloAmerican
	Venture Capital	APVentures ADVANCE & PIONEER

RESEARCH, DEVELOPMENT AND POLICY ADVOCACY



- Improve the understanding of how and where PGMs can be used by investing in primary R&D
- Support R&D through to early stage commercialization (goal: decrease delivered cost of H2)
- Participate in and spearhead global advocacy initiatives to create a supportive policy & regulatory environment for PGM bearing technologies.

VENTURE CAPITAL: AP VENTURES INVESTS IN START-UP COMPANIES THAT USE OR FACILITATE THE USE OF PGMS

APVentures
ADVANCE & PIONEER

altergy systems

United Hydrogen
FUELING THE FUTURE

hydrogenious TECHNOLOGIES

GREYROCK
TRANSFORMING NATURAL GAS™

HyET
Hydrogen Efficiency Technologies

IT'S Fresh!™

$200m venture capital fund focused on PGM technologies that solve globally relevant challenges

ACTIVITIES UNDERTAKEN ARE GLOBAL – FOCUS ON KEY MARKETS FOR HYDROGEN AND FCEVS

Policy advocacy and communications initiatives	AP Ventures portfolio companies	Industry partners building HRS supported by Anglo	Research and development

3 WE TAKE AN ECOSYSTEM BASED APPROACH TO OUR ADVOCACY, VENTURING AND INFRASTRUCTURE CO-INVESTMENT ACTIVITIES

USA example

Policy advocacy works to establish a level playing field between different technologies (eg battery, renewable fuels etc) in terms of incentive/funding schemes for FCEVs and HRS.

Policy Advocacy

FCHEA Fuel Cell & Hydrogen Energy Association

California Fuel Cell Partnership — Driving for the Future

Hydrogen infrastructure

Anglo co-funded the rollout of HRS in partnership with Shell, Toyota and Honda to provide the necessary infrastructure for early FCEV adoption

UHG able to tender for H2 supply to new customers

Hydrogenious logistics trial with UHG underway. Provides UHG with a competitive edge in delivering H2 and provides access to the US market for Hydrogenious

Hydrogen logistics

United Hydrogen — Fueling the Future

Hydrogen supply

GREYROCK — Transforming Natural Gas

Hydrogen logistics

hydrogenious TECHNOLOGIES

Greyrock can potentially supply by-product hydrogen into the market at very low cost

1 We proactively develop markets for our metal

- We have been investing in market development successfully for over 15 years
- We focus on stimulating demand from jewellery, investment and industrial applications
- We have a specific interest in supporting the development of hydrogen and fuel cells
- We invest directly in a portfolio of activities from R&D, to venture capital, demonstration and commercialisation

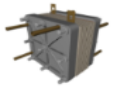
2 We partner with customers and industry

- We seek to form relationships and invest in opportunities that are mutually beneficial
- We strive to efficiently develop the market by collaborating with our customer and industrial partners
- We have a track record of successful partnerships and investments.

3 We seek new opportunities across sectors with an emphasis on hydrogen and fuel cells

Water treatment 

Medical 

Fuel cells and Hydrogen 

Energy storage 

Electronics 

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