FUTURE ENERGY, TODAY

# Inaugural Quarterly Activity Report

Emerging producer of liquid helium and liquefied natural gas

September 2019





## **Overview**

- Founded in 2014 & listed on the JSE Alternate Exchange (Alt<sup>x</sup>) in 2015, and ASX in 2019
- Sole asset is its 90% shareholding in Tetra4 which holds the first and currently only, onshore petroleum production right in South Africa (Virginia Gas Project)
  - located in the Free State, about 250 km southwest of Johannesburg
  - first mover advantage on domestic distribution of natural gas
  - gas fields are situated in an energy scarce area, with high customer density and limited competition
- Business focus is on the commercialisation of the Virginia Gas Project significant proven reserve estimates of both helium and natural gas
  - average helium concentration of 3.4% with last well drilled in September 2016 producing 11% helium
  - purity of natural gas is also high (over 90% methane) with almost zero higher alkanes
  - currently has 12 wells which are production ready
- Started producing compressed natural gas which contains high concentrations of Helium in May 2016
  - current plant services buses in the region owned and operated by a large listed logistics company, KAP Industrial Limited, through its subsidiary Megabus
  - offers a cleaner substitute for transport fuel, thermal fuel and power





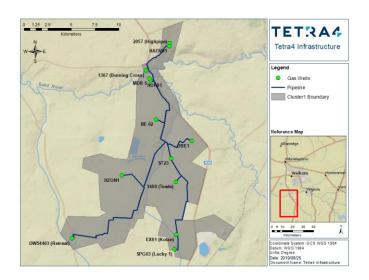


## **Recent Contractual Awards**

## **Pipeline**



- Pipeline will be built to join 12 existing wells to reticulate gas to plant for processing
- 52km in total, buried 1.5m underground out of HDPE
- Contracted as EPC under FIDIC Silver Book



## **Drilling**



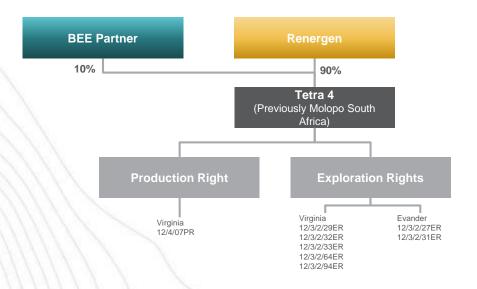
- Horizontal well in sandstone to determine feasibility of potential reservoir
- Planned 1.8km total length, 374m total vertical depth
- Site establishment commenced 23 September 2019



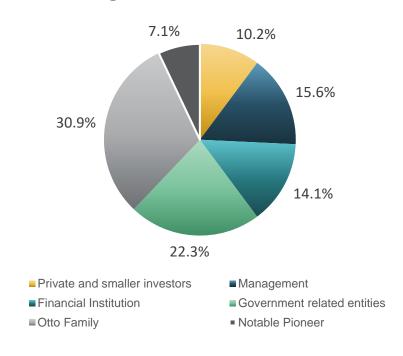


# **Company Structure and Shareholding**

Capital Structure at 26 September 2019				
Share Price	-A\$0.88			
Shares on issue	~112M			
Options on issue	~6.1M			
Market capitalisation	~A\$99.1M			
Debt	interest free loan NPV ZAR15M undrawn OPIC loan of US\$40M			



## **Shareholding**



Coverage report prepared by MST Access dated 2 September 2019 values Renergen at A\$1.80/share equivalent



# **Management & Board**



#### Stefano Marani CEO

B.Sc Actuarial Hons with +15 years experience working in structured finance for institutions including Deutsche Bank and Morgan Stanley. Instrumental in the acquisition of Tetra4 and founding shareholder in Renergen.



#### Nick Mitchell COO

Experienced Network Engineer with experience in developing infrastructure projects in Africa.

Instrumental in the acquisition of Tetra4 and is the current Chairman of the Onshore Petroleum Association of South Africa (ONPASA).



#### Fulu Ravele CFO

Chartered Account with +10 years experience working for institutions including Deloitte and Barclays Capital.



# Brett Kimber Chairman

Senior executive with +25 years experience working for the Anglo American, Linde Group and Aliaxas Group.

Honours in both Mineral Economics and geochemistry. Brett is currently the Managing Director of Eazi Access Group.



## Francois Olivier Non-Executive Director

Francois Olivier is a portfolio manager and executive committee member at Mazi Asset Management. He has 19 years of investment research and portfolio management experience, the first seven of which were spent in the USA.



#### David King Non-Executive Director Australia

Dr King was a founder and director of Sapex Ltd, Gas2Grid Ltd and Eastern Star Gas Ltd.

He has substantial natural resource related experience, having previously served as managing director of North Flinders Mines Ltd and CEO of Beach Petroleum and Claremont Petroleum.



## **Bane Maleke**Non-Executive Director

20 years in senior management at the Development Bank of South Africa and held the position of Regional Executive for the SADC and East Africa Regions.



Mbali Swana
Non-Executive Director

Mbali is the chief executive officer of Prop5 Corporation Proprietary Limited, a turnkey built environment infrastructure and engineered products developer which he founded in 1986.



#### Luigi Matteucci Non-Executive Director

Experienced executive who actively consults on strategic and business development initiatives in the mining and engineering field.

# **Executive Summary**



Gas producer in SA with helium & LNG production in 2021



Only exposure to helium on the ASX



team with material ownership



Significant gas and helium reserves



Helium is a rare element without substitutes



Strong
helium demand
& supply
fundamentals



Helium prices have gone up 460% in the last 11 years



Helium concentrations up to 20x the global average

Source: Edison Research & USGS





# Reserves & Resources - Virginia Project

Reserves	Total Proved (1P)	Probable	Proved + Probable (2P)	Possible	Proved + Probable + Possible (3P)
Methane (BCF)	40.76	98.23	138.99	145.18	284.18
Helium (BCF)	1.01	2.39	3.41	3.45	6.86

Contingent Resources	Low Case (C1)	Best Case (C2)	High case (C3)	
Methane (BCF)	237.3	435.9	648.5	
Helium (BCF)	7.9	14.4	20.9	

Prospective Resources	Low Case	Best Case	High Case	
Methane (BCF)	640	1,278	2,069	

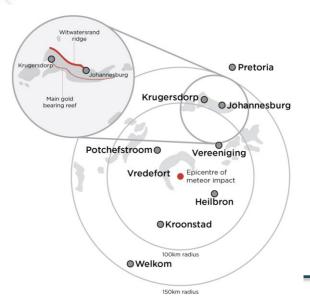
Source: MHA Report, March 2019

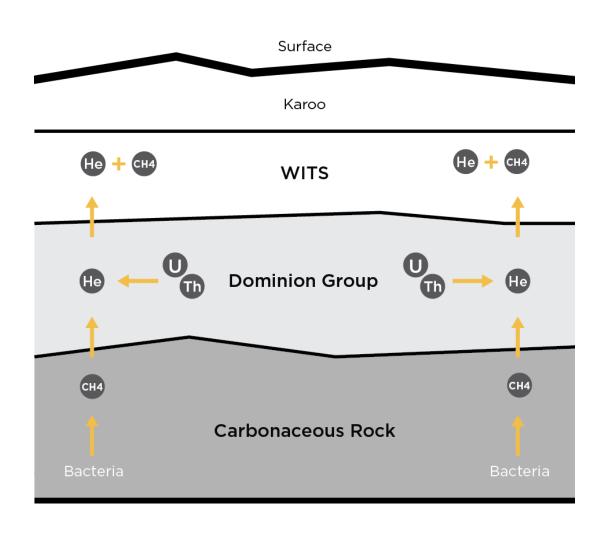


# Why is the Gas There?



Meteor consisted mainly of uranium, thorium and platinum group metals







# Helium Uses - "Irreplaceable without Substitutes"

#### element in many modern industries. CONTROLLED ATMOSPHERES 3% WHY IS HELIUM IMPORTANT? **BREATHING 3%** Helium is a rare commodity OTHER CRYOGENIC 4% Helium becomes economically viable to extract from natural gas at concentrations as low **ELECTRONICS 4%** as 0.1% The Virginia Gas Project's **LEAK DETECTION 5%** average concentration of helium is 3.4% FIBER OPTICS 6% · Tetra4 is placed at the forefront of exciting new discoveries for global helium **PURGING 6%** supply LIFTING/BALLOONS 8% LABORATORY 10% **OTHER 14%** WELDING 17% MRI 20% Source: USGS

Helium is a vital and irreplaceble

HELIUM USES

## THE PROPERTIES OF HELIUM

Helium is best known for being lighter than air, but it actually has many unique qualities that make it important for applications in technology.

#### INERT

Doesn't react chemically with other elements



#### NON-TOXIC

It's colourless, odorless and tasteless



#### LIGHTER THAN AIR

Ability to lift and/or float



#### BOILING POINT -268.9°C

Does not solidify at atmospheric pressure



#### SUPERFLUID

The only substance with no viscosity in liquid form making it critical in use for high energy physics





# Helium Market - "Strong Supply & Demand Dynamics"

## **Key Considerations**

#### **Demand**

- Estimates vary but annual usage is 6-7BCF (28m 32m kg) worth \$US6bn
- US is the largest user of helium, accounting for 41% of current global demand
- Increased penetration of MRI in emerging markets
- Growth in electronics, semiconductors, LCD and fibre optics mainly from South East Asia

## Supply

- USA is the world's leading helium supplier with ~ 55% share of global supply in 2016, followed by Qatar with ~32% (Source: USGS)
- Qatar and Russia have been unreliable sources of helium supply
- Blockade of Qatar has reduced world supply and impacted price
- Supply is diminishing with the US Bureau of Land Management's reserves down to under 5BCF (Renergen has discovered commercial 3P reserves of 6.8BCF)
- Hugoton field winding down, with production forecast < 500 MMSCF per anum</li>

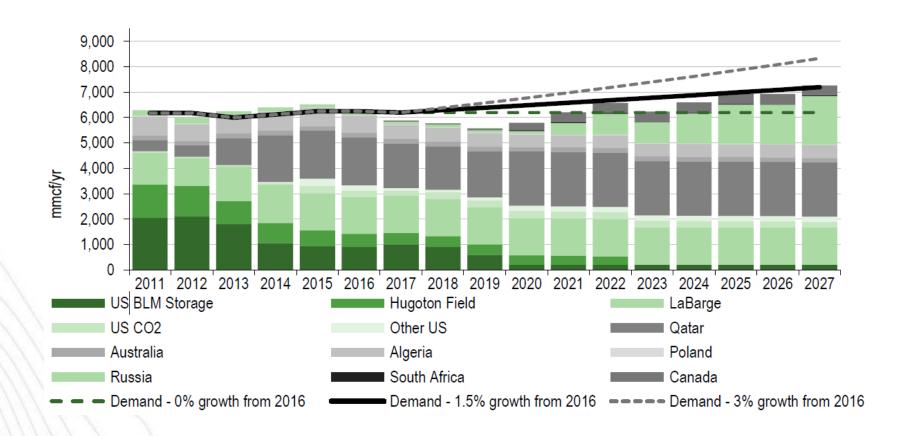
## Key Future Catalysts

- Space agencies (China, India, SpaceX)
- According to Deloitte's 2019 report "Global health care outlook", the number of private hospitals in China doubled to 18,759 from 2011 to 2017 which represents a compound growth of over 12% in the private health care sector alone
- The world's only primary helium supply, the USA Federal reserve goes offline to the public sector in 2021, due to depletion
- Qatar's supply remains volatile given the situation in the Middle East



# **Global Helium Supply & Demand**

## Global supply and forecast, Edison Investment Research compiled November 2017

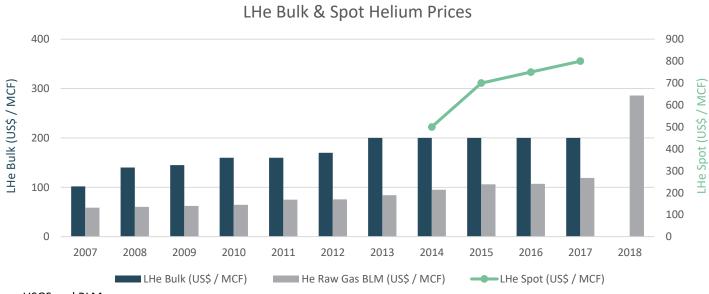


Edison Global Research is of the opinion that there is likely to be a global shortage of helium supply starting in 2019 and continuing until new planned projects in Qatar and Russia come online, planned for 2020 and 2021 respectively. There is no way of manufacturing helium artificially and existing naturally occurring resources are finite.



# Helium Price – "Significant Upswing"

## LHe Bulk & Spot Helium prices



Source: Edison, USGS and BLM

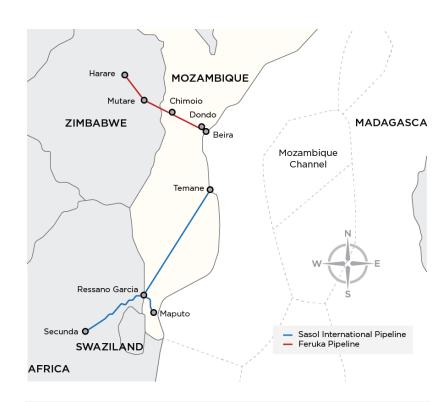
- The helium BLM auction prices have increased by over 460% since 2007
- Each year the US government auctions helium from the Federal Reserve with 2018 prices ~US\$280 / MCF
- Private industry Grade-A (99.99%) helium was estimated to be selling for US\$200 / MCF in 2017, with current estimates significantly higher
- Contract based pricing with long term take or pay supply contracts with industrial companies
- It has been reported that spot prices of > \$800 / MCF of helium have been achieved in certain cases in the Far East





## The South African Gas Market

- Natural gas is currently imported via pipeline from Mozambique by Sasol
- Pipeline runs to Johannesburg reticulated to customers via low pressure pipeline
- Majority of imported gas is used by Sasol for its petrochemicals business
  - estimated **shortfall of gas** in Johannesburg of up to 80 million GJ/annum
  - Industrial Gas Users Association of Southern Africa predicts gas supply crunch imminent, with Sasol's Mozambican field in depletion
- Pipeline natural gas sold at low pressure for ZAR 120/GJ
- LPG is widely sold to industrial customers not on the pipeline in Johannesburg for approximately ZAR 300/GJ
  - LPG in South Africa is low quality, being predominantly butane
- Estimated daily LPG consumption in SA of 10,000 barrels equivalent per day (>61,000GJ)
- ~377 090 heavy duty trucks registered in South Africa



Renergen's supply in 5 years time is estimated at ~10,000 GJ/day

Less than 1% of trucking market or ~13% of the domestic LPG market



# **Business Verticals - "Wellhead to Tank"**

### Ownership of end user in 4 market segments

#### **Power generation**

- Gas to power using small generators, with heat recapture for steam generation for clients
- Combined sale of heat and power yields highly competitive economics

#### Industrial users

- Substitution of significantly more expensive Liquid Petroleum Gas (LPG) with natural gas
- Typically very large-scale users of energy for thermal purposes

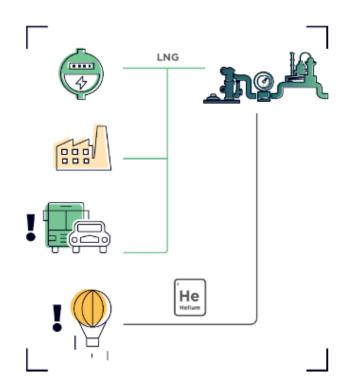
#### Liquid fuel substitution

- Dual fuel applications for trucks and busses, reducing emissions and running costs
- Tetra4 will establish refilling depos in Johannesburg, Cape Town,
   Durban, Bloemfontein, Harrismith and Port Elizabeth

#### Helium

- Significant export potential given South Africa's strategic location
- Helium can only travel for 45 days in containers before venting payload

VERTICALLY INTEGRATED BUSINESS - FROM WELLHEAD TO TANK







# **Plant After Expansion**



## **Natural Gas Instead of Diesel**

## **Tetra4 Diesel Dual Fuel (DDF) truck**

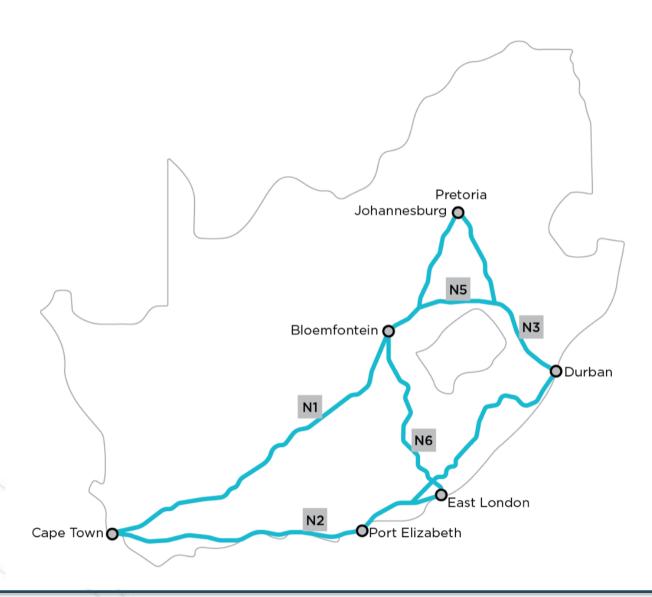


## **Dedicated NG Engines - Megabus CNG buses**



- Over 1.7 million km with CNG on Megabus buses in Virginia
- Extended maintenance intervals
- Reduced CO2 emissions by over 2.1 million kilograms

# **LNG Routes Planned**





# **Exploration**

Karoo

Supergroup

Ventersdorp

Supergroup

Klipriviersberg Group

2x Vertical exaggeration

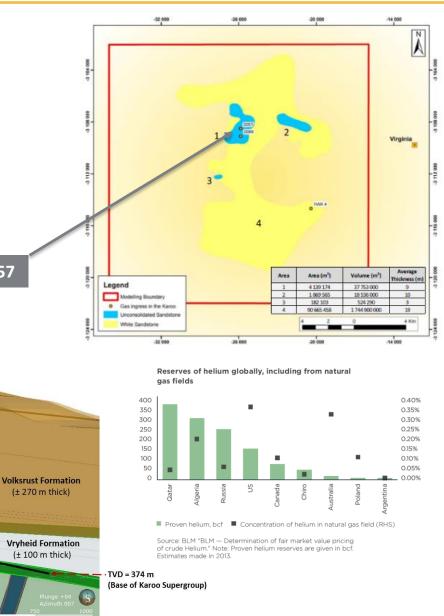
- Following the identification of a sandstone trap in excess of 90km<sup>2</sup> and over 100m thick in areas, a horizontal well will be drilled
- In September 2016 a vertical well, named 2057, was drilled and a discovery of gas with 11% helium was made
- The results from drilling the horizontal well will be used to determine the extent of the sandstone reserve and to size Phase 2 accordingly

Gas intersected in

well 2057 at 295 m

Base of Karoo Supergroup

2057





## **FAQ**

- Why list on the ASX when already listed on the JSE?
  - Despite the market cap of the ASX and JSE being relatively similar (12<sup>th</sup> vs 19<sup>th</sup> ranked globally as of November 2018), ASX has more than 200 listed energy companies and more than 600 mining companies. JSE has a total of around 400 companies across all sectors, implying by comparison that companies on the JSE tend to be of a significantly larger market cap
    - The top 100 JSE companies represent 88.4% of the total market cap, with the average per company of A\$9.4bn\*
    - By contrast, 84% of the total market capitalization of the ASX is comprised of companies with a market capitalization of less than A\$500m\*
    - Renergen is unique to the JSE, as its only listed domestic oil and gas company, hence no domestic research coverage. The ASX has over 200 listed energy companies
    - Limited research and domestic comparables means liquidity will be limited on the JSE
- Is the stock fungible on both exchanges?
  - Yes. 1 CDI on the ASX is equivalent to 1 share on the JSE. A CDI on the ASX can be migrated to the JSE, and a share on the JSE can be migrated to the ASX. This process is done through Computershare, but you need a broker both in Australia and South Africa
- Are there Exchange Controls in South Africa?
  - Yes, but applicable to South African residents only:
    - A South African resident may only buy and sell stock on the JSE and may not migrate the stock from the JSE to the ASX (without obtaining express permission, which may take several months)
    - Anyone outside South Africa may trade shares on both stock exchanges freely, and migrate the stock freely
    - South African banks and stock-brokers may trade share on both stock exchanges freely, and migrate the stock freely
- What is the difference between the AltX and mainboard on the JSE?
  - The governance principles for both are very similar, with the AltX attracting slightly more scrutiny as the companies are generally smaller and perceived to be nascent
  - All stocks on the JSE trade on the same electronic platform, regardless of AltX vs mainboard
  - Liquidity on the JSE is a function of market capitalization and free-float, and the AltX vs mainboard distinction has no influence as all stocks on the JSE are traded on the same platform with no regard to their categorisation

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