# 2015

### UNIQUE AFRICAN ON-SHORE NATURAL GAS





## DELIVERING A READILY AVAILABLE ENERGY SOLUTION TO THE ENGINE ROOM OF AFRICA

Natural gas 200km from Johannesburg with no fracking required

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### CORPORATE SNAP

Corporate snapshot Last Price (22 Oct 2015)	\$0.04
Shares on issue	184.3
Market Cap.	\$7.03m
Cash (as at 30 June 2015 plus \$600k Sept placement)	\$0.89m
52 Week range	\$0.012 - \$0.08
Options (50c, 30 June 2016 expiry)	1m
Options (20c, 28 April 2017 expiry)	4m
Diluted Market Cap.	\$7.95m
Total potential shares	189.3m



### **DIRECTORS & MANAGEMENT**

Adam Sierakowski	Chairman
Dr. D. James Searle	Non Executive Director
Agapitos M. (Geoff) Michael	Non Executive Director
Johan Visage	CEO

Mr Johan Visage is KKO's in-country CEO with 30 years expereince in the oil and gas industry as an engineer with senior roles in mid and downstream gas engineering, field development economics and gas sales and purchase agreements.

Johan provides upstream petroleum consulting services in the areas of geosciences, operations, petroleum economics, and related areas. He provides advisory and management services to South African and international investment banks, junior and major petroleum companies and also has extensive experience with energy and petroleum regulatory bodies in South Africa, including the Petroleum Agency of South Africa (PASA), the National Energy Regulator of South Africa (NERSA) and Department of Energy.









### INVESTMENT CASE HIGHLIGHTS

### Strategically located: Natural Gas 200km from Johannesburg (South Africa).

- At the heart of South Africa's existing coal based energy and power generation infrastructure and within close proximity to major industrial, mining, manufacturing and high density residential areas, provides multiple economically viable revenue generating options (refer Figure 1);
- The Petronet gas pipeline, known as the Lilly Pipeline, runs through the ER38 and adjacent to the ER56 tenements transporting methane rich gas from Sasol's Secunda plant as far as the Durban area. The Lilly Pipeline's capacity of 23 MMGJ p/a is currently under-utilized. Current capacity could be increased to 40 MMGJ p/a and move gas in both directions from point of entry; and
- Government has opened a Gas IPP program process, at RFI stage.

# Country and region currently in desperate need of a clean, alternative energy source for power generation, industrial, commercial and domestic usage and the transportation sector.

- SA power utility, Eskom, is consuming diesel to minimise load-shedding of over US\$2bn per annum......diesel costs in excess of 4 x gas prices;
- Gas can contribute to base-load power demands, unlike renewable energy;
- Gas can address peak-load power demands, the main reason for the current shortfall; and
- The introduction of gas will serve as catalyst for industrial developments.

### Afro Energy secured large footprint in emerging gas plays in energy-starved area.

- Over 1,400km<sup>2</sup> of granted Exploration Rights;
- Over 4,300km<sup>2</sup> of Exploration Rights under application; and
- Over 6,200km<sup>2</sup> of Technical Corporation Permits.

### Most advanced on-shore gas play in SA.

- Over 800 historical coal exploration wells;
- 21 gas exploration core wells drilled gas identified in coals and sandstones in every well drilled;
- Drilled 8 pilot test wells and achieved spontaneous gas flow to surface from 7 of 8 wells, without any stimulation and minimal/no dewatering;
- Aeromagnetic survey, within Amersfoort, covered 145km<sup>2</sup>, which represents about [20%] of the license area. It delineated likely compartment traps for distinct yet contiguous gas fields;
- Approximately US\$10m invested throughout the ER38/56 tenements;
- Resulting in an initial independent estimate GIIP of 2.4 Tcf and probabilistic estimate of total contingent resources over the ER38/56 tenements of 1.5 Tcf (refer Table 1). Note that this evaluation pre-dates the sandstone gas flows from test wells and the exploration drilling done at Volksrust, both of which will revise the figures upward;
- Methane content high (98.5 percent); and
- Surrounding TCP areas yet to be explored.





# Shallow geology (150m-500m) allows for conventional technology that is internationally proven and does not require "fracking".

- Conventional gas flow from sandstones adjacent to the coal seams trapped by impermeable dolerite sills and dykes, present across entirety of tenements; and
- Therefore, quick potential revenue from sandstone horizons, before CBM production from coal deposits.

# Geology allows for multiple-well approach ("1000 well potential" eliminating reliance on "one-well" success). This is referred to as a Resource Play in the petroleum industry.

### Average cost per well only US\$0.3m-0.48m.

- Sustainable well flow rates from pilot test wells over test period would have had an approximate 6-month payback period at say US\$10/GJ (average market price currently between US\$8 to US\$15/GJ); and
- Pilot test well KA-03PT has flared over 26 MMScf in 6 months during an extended well flow test. If the gas had been sold under prevailing RSA gas prices about US\$10/GJ it would have generated revenue of US\$260,000.



# Government has approved a "Bulk-Sampling Permit" for existing and proposed wells allowing trial production and sales to generate early revenue in 2016.

### More than exceeds SA black ownership requirements.

51% of Afro Energy is black-owned meaning the company is more than compliant and will ultimately also provide users of the gas preferential procurement points in achieving their BEE requirements.

### Strong technical management team with proven track record.

## Afro Energy is now embarking on the next phase of exploration and development (Figure 2):

- Raising US\$12.5m for early monetization and appraisal programs (Table 2); and
- Early stage revenue from "Bulk Sampling Permit" sales 1,370 GJ/day @ US\$8/GJ providing initial gross cash flow of approximately US\$ 8 million for this first two years of operations will be available to the first Block until the production license is awarded for ER56.





#### Figure 1 - Location of Amersfoort Project Exploration Rights.

### "Block" approach to roll-out of the Project.

Gas fields to be sub divided into dedicated "Profit Sharing Areas"

- The granting of the bulk sampling license is a milestone and now the trigger for roll-out of Afro Energy's future business plan;
- Founding Investors have successfully funded and delivered the business to this point...which was planned and is now achieved...now next phase commences rolling out an expanding cycle of replication "Block Participation Profit Sharing";
- This is a contractual arrangement not requiring any DMR or Sec 11 approvals;
- Blocks were defined by previous drilling in concert with the high-resolution aeromagnetic survey;
- Areas can be fully developed and cash positive within 1 year (clear time-frames with predictable Capex and Opex...attractive to investors);
- Investors will have their investment profit sharing participation from a dedicated Area (benefit of focussed investment);
- Profits will be distributed to investors on a pro-rata basis in each Area;
- Afro Energy will manage the appraisal, development and operation of each Area and will provide centralised marketing and product delivery to its off-take partner(s);
- Areas are of suitable size to each become a self-sustaining production unit, with measurable outputs;
- The plan (Figure 2) is to develop the field in Blocks, divided into 10 Areas, each to have approximately 20 wells ; and
- First Block includes the best of the existing wells, so lower risk...



 Table 1 - Amersfoort Project gas resources, Gustavson Associates.

Contingent Resource (100% Gross)	1C (Bcf)	2C (Bcf)	3C (Bcf)
CBM	627.5	1,110.2	1,726.7
Gas in Sandstone	150.7	372.5	791.0
TOTAL	778.1	1,482.7	2,517.7
Gas in place (100% Gross)	1C (Bcf)	2C (Bcf)	3C (Bcf)
CBM	967.1	1,689.4	2,616.7
Gas in Sandstone	292.6	706.3	1,450.6
TOTAL	1,259.7	2,395.8	4,067.3

#### AS AT AUGUST 2012

#### **First Production Block.**

The first Block selected is the area surrounding the existing, shut-in wells (Refer Figure 2 below)

- This will be lowest risk, with highest return to first mover investors...in the same block as the best of existing holes;
- As demand to participate is generated on the back of success, the terms will become more favourable to Afro Energy in subsequent Block participations; and
- Will require approximately US\$12.5m to develop the production Block below (breakdown of the costs are provided in Table 2 below).

#### Figure 2 - Monetization and appraisal program of Block 1 (Areas 1&4) within ER 56.





### Uses of Funds for Block 1 Development (Areas 1&4).

 Table 2 - Budget estimation for monetization - production appraisal program.

Capital Costs	Cost (US\$m)	Total (US\$m)
Drilling Costs	6.67	
Associate Water Drilling Costs	0.29	
Additional Capex	4.76	11.72
Field Operating Costs	Cost (US\$m/y)	Total (US\$m/y)
Afro Energy G&A Overheads	1.11	
Fixed Production Costs	0.44	1.55

 Table 3 - Budget breakdown and time-frame per Stage for monetization and appraisal program.

Stage	Capital raised (US\$m)	Use of funds per Stage, includes:	Completion Period
Stage1	US\$7.71	<ul> <li>9 monetisation - production appraisal wells drilled per Area 1&amp;4</li> <li>Installation of production equipment</li> <li>2 DST wells</li> <li>Installation of gathering system &amp; delivery terminal</li> <li>Fixed Opex</li> <li>Additional Capex</li> <li>Afro Energy Overheads</li> </ul>	6 months
Stage 2	US\$4.84m	<ul><li> 8 production appraisal wells</li><li> Installation of production equipment</li><li> Gathering system</li></ul>	5 months





### Budgeted time frame - Block 1 (Areas 1 & 4).

 Table 4 - Development & Cost Time-line.

MONTHS	1-6	7-12		24
Funding				
Capital Costs (US\$m)			I>	
Drilling & Testing	3.93	2.74		6.67
Water drilling Wells	0.17	0.12		0.29
Additional Capex	3.08	1.67		4.75
Field Operating Costs (US\$m per year)			ŀ>	
Afro Energy G&A Overheads		1.11		1.11
Fixed Production Costs		0.44		0.44







### Investment Highlights.

- Substantial gas demand
- Proven gas flows and Low well and operating costs
- No Fracking
- Large exploration ground package
- Close to existing infrastructure
- Numerous potential gas off takers
- First gas bulk sampling permit granted
- Low impact on people and property
- Low impact on the environment
- Experienced domestic and international team





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