

# UNDERSTANDING HOW SHALE GAS CAN BENEFIT SOUTH AFRICA'S ECONOMY AND THE ENVIRONMENT



23rd – 24th July 2014,  
FOCUS ROOMS in Sunninghill, Johannesburg



## SHALE GAS CONFERENCE

Get to grips with the shale gas industry in just two days

South Africa's energy policy is going through a rethink in the highest corridors of power with the government declaring a waning interest in coal, and reconsidering its Integrated Resource Plan focus on nuclear and showing a keen focus on natural gas, including shale gas, and hydropower. The discovery and possible exploration development of shale gas in the Karoo is set to be a game changer for the South African economy. President Jacob Zuma pointed out during his State of the Nation address that the development of petroleum, especially shale gas, will be a "game changer" for the Karoo region and the South African economy.

The Shale Gas & Oil revolution has been well publicized and debated, with much of the discussion addressing the impact on society, environment and the economy. Amabhubesi has created a platform of discussion on the expectations for shale gas development with particular focus on what are the challenges and opportunities associated with this type of development? Key stakeholders and role players with factual, statistical evidence will share the kind of potential that natural gas development can unlock for the country while focusing on the challenges that lie ahead yet developing the means and methods to carefully monitor all aspects of shale gas & oil production.

Discover whether 'safe exploration' and exploitation of shale gas, will ensure that fracking is conducted "in a socially and environmentally balanced manner". Evaluate the economic growth projections and outlook on employment and discuss how policy considerations including governments position paper – the Integrated Resources Plan on the uptake of shale gas.

Is Shale Gas & Oil seems the "game-changing" opportunity that South Africa and Africa needs?

Don't miss this opportunity to be part of the interactive discussions on how shale gas will impact South Africa's developmental goals?

### EVENTS OBJECTIVES:

- Discover the Latest on Draft Regulatory Framework Policy
- Learn about industry practices and standards for safe exploration and production
- How to streamline community concerns with those of Government and Stakeholders
- How to develop Shale resources
- How to overcome environmental and water management challenges
- How to source the right technology to commercialize resources
- Drilling and Hydraulic Fracturing (implementing successful shale gas projects)
- Learn about the most cost effective, innovative solutions, and emerging technologies related to water resources management, geological and geotechnical aspects
- Gather information what are the major risks for investors at this stage
- Politics, Business, Stakeholders & the Public – What are the Mitigating Factors

## WHO SHOULD ATTEND?

- Department of Energy
- Department of Mineral Resources
- Department of Trade Industry
- Department of Agriculture, Forestry and Fisheries
- Department of Environmental Affairs
- Department of Water Affairs
- Chief Directors, Director Generals, Deputy Directors & Directors
- CEO, COO, MD
- Energy Analysts
- Geologist, Geotechnical Engineers
- Exploration technicians
- GIS
- Engineers
- Utility Managers
- Mine Managers
- Project Managers
- Technical Directors
- Compliance Officers
- Regulatory Managers
- Safety engineers
- Metallurgists
- Consulting Firms
- Legal Firms
- Analysts
- Business Development Managers
- Unions
- Universities

## INVITED SPEAKERS



**CHRIS BREDEHANN** – *PWC Director Oil and Gas*

Chris is the energy industry leader for PwC in Southern Africa and the Africa Oil & Gas industry leader for PwC Africa's Advisory division. He has more than 23 years of experience with PwC, of which 19 have been in consulting. He has worked with small companies to large national and international clients in Africa, and the rest of the world to develop strategy, improve operations, processes and systems. His client base consists mainly of energy companies. Chris is knowledgeable on the Oil & Gas industry and holds an MBA in Oil and Gas management from the Robert Gordon University (UK). He is a Chartered Accountant, Certified Internal Auditor and Certified Information Systems Auditor. Chris is the media spokesperson for energy industry matters for PwC in South Africa, and regularly presents at industry events.



**ROB JEFFREY** – *Econometrix Managing Director*

Rob Jeffrey, managing director of Econometrix is an acknowledged expert in the fields of electricity, energy and shale gas and has worked closely with major international resource companies, industry and the power generation sector. He has been the keynote speaker at numerous international and domestic conferences and has given presentations to The SA Reserve Bank, Treasury, the Department of Trade and Industry and numerous other public and private entities.



**JONATHAN DEAL** – *CEO The Karoo Action Group*

Jonathan Deal is founder and CEO of Treasure Karoo Action Group. He published Timeless Karoo in 2007 and is a member and past chairman of the Southern African Freelancers Association. Recipient in 2013, of the coveted Goldman Environmental Prize he is sought after as a speaker at international conferences and has been selected to present at Al Gore's International Climate Leadership School in Johannesburg in March 2014



**PETER ROSEWARNE** – *Principal Hydrogeologist SRK Consulting*

Peter graduated from Kingston University, London, in 1974 with a BSc Honours in Geology. He emigrated to South Africa in 1975 taking up a post as regional geologist at the Geological Survey in Cape Town, initially carrying out geological mapping in the Beaufort West area. He became involved in groundwater work in 1976 and transferred to the Department of Water Affairs where he worked until 1982, producing a definitive study of groundwater in the Hex River Valley along the way. This work formed the basis of an MSc thesis, the degree being awarded in 1984 from Rhodes University. He joined the then-named Steffen Robertson and Kirsten in Johannesburg in 1982 working on various mining related projects before relocating to Cape Town in late 1984 to start a groundwater section in SRK's local office. He now heads a team of 14 hydrogeologists, geochemists and technicians and has carried out projects in Namibia, Botswana, Zimbabwe, Mozambique, Tanzania and Chile. Major recent clients include Eskom, Shell, Chevron, Skorpion Zinc and WREM International. He has worked on many Karoo aquifers projects and became involved in groundwater issues related to Karoo shale gas in 2011. He is the project manager for the Karoo Groundwater Expert Group, set up by Shell in late 2011, which has published the Karoo Groundwater Atlas, volumes 1 and 2.



**PATRICK LEYDEN** – *Partner Mining Energy and Natural Resource Webber Wentzel Attorneys*

Patrick Leyden is a partner in Webber Wentzel's Mining, Energy & Natural Resources Practice. He specialises in mining and mineral law. His experience includes advising on matters of compliance related to the Mineral and Petroleum Resources Development Act, No. 28 of 2002; advising local and international bullion banks on compliance with the Precious Metals Act, No. 37 of 2005, the drafting and vetting of mining and corporate agreements; and the conducting of due diligence investigations relating to financing transactions and mergers and acquisitions within the mining sector. Patrick has been involved in various black economic empowerment transactions and restructurings as well as providing title opinions for

local transactions, international listings and capital raisings. He has advised both local and international clients in respect of compliance with mining and mineral law in South Africa. Patrick has BA and a LLB degree from Rhodes University.



**LUKE HAVEMANN** - *Oil & gas ENS Africa*

Dr. Luke Havemann specialises in oil and gas in the projects department at ENSafrica.

He is the only practising attorney in South Africa who holds a PhD in the field, which he received from the University of Aberdeen, Scotland, and where he was awarded the CB Davidson scholarship. Prior to joining ENSafrica, he founded the only Southern African law firm that was geared exclusively towards providing legal advice to the energy industry.

He holds the position of Consulting Editor: Oil and Gas for Energy Forecast - an African publication focusing on economic, political, social and other issues relating to the energy sector, and has produced a critical analysis of the legal regime governing the United Kingdom's offshore oil and gas industry, which was published as Chapter 9 of the 2nd edition of Greg Gordon's and John Paterson's Oil and Gas Law: Current Practice and Emerging Trends.



**PROF PHILIP LLOYD** – *Energy Institute – Cape Peninsula University of Technology*

Dr. Philip Lloyd, UN IPCC co-coordinating lead author, [Nuclear Physicist!] and Chemical Engineer, and author of more than 150 [189] refereed publications. "The quantity of CO2 we produce is insignificant in terms of the natural circulation between air, water and soil. I am doing a detailed assessment of the UN IPCC reports and the Summaries for Policy Makers, identifying the way in which the Summaries have distorted the science." Google natural CO2 vs man-made CO2 for the real facts.

Philip Lloyd's Professional details- Honorary Research Fellow: Energy Research Centre: University of Cape Town, Cape Town; Fellow: SA Acad of Engineering ; Chair: VAF: Chemical & Allied Industries Association; Fellow: SA Chemical Institute (SACI)



**GEOFFREY CHAPMAN** – *Trade Economist, SABS*

Geoffrey Chapman is Trade Policy Expert at SABS and Guest columnist at Fin24.com. He currently works on the impact standards have on the economy.

He has two primary roles at SABS, firstly, to determine the economic value of standardisation to the South African economy and secondly, to evaluate new proposals for their economic benefits. In addition to this, he oversees South Africa's WTO/ TBT Enquiry Point; while as a Guest columnist for Fin24 he was writing about technical barriers to trade and South Africa's TBT Enquiry Point. Previously he was an Assistant Lecture at the University of Pretoria.



**REQUIER WAIT** – *Lecturer, School of Economics, North-West University*

Requier Wait is a lecturer in the School of Economics at the North-West University (Potchefstroom Campus). He is currently doing his PhD on the structure of petroleum fiscal systems for the oil sector in Africa.

Mr Wait's research interests include the economics of oil and gas, FDI and Input-Output Analysis. His current research considers the macroeconomic impacts of upstream oil sector investment and how host governments can incorporate these impacts with the 'government take' statistic when designing petroleum fiscal systems. Other focus areas include the potential economic impact of developing the Karoo's shale gas reserves, and the impact electricity tariff increases will have on the South African mining sector as well as the mining supply chain.



**KOOS JOORDANN** - *Executive Technical Director, Master Drilling Group*

In 1995 he started studying part-time qualifications in Mechanical Engineering Design at the Tshwane University of Technology in South Africa. As well as a Bachelors diploma in International Technology Management through Groningen University, Netherlands which he completed in 2000. He further completed a MBA through Bond University, Australia during 2002.

His career started in 1995 at FEV Motorentchnik in Aachen, Germany as a Mechanical Training and Design Engineer. In 1997 Koos joined Joy Mining Machinery in South Africa as a Design and Project Engineer. In 2001 he was appointed as Engineering Manager at Master Drilling Pty Ltd in South Africa. Currently serving as Executive Director on the board of Master Drilling Group Ltd. with various international operations. Koos's responsibilities revolve around business development and Technical Strategy/Management apart from his corporate responsibility since Master Drilling Group's listing on the JSE towards the end of 2012.

**PAUL HARDCASTLE** - *Director Planning and Policy Coordination, Western Cape Department of Environmental Affairs & Development*



**IVO VEGTER**

Ivo is a journalist and columnist who writes for publications such as The Daily Maverick, CAR magazine and ITWeb Brainstorm, and has occasionally reported for the Mail & Guardian, The Times and various other mainstream publications.

## DAY 1

08h00 – 08h30

### Registrations

08h30 – 09h00

### Welcome and Opening Remarks by Chairperson

09h00 – 09h45

### Fracking in the Karoo - The Fracking Debate

- Does it “even” exist
- Paradigm Shift and the Matter of when
- Will shale development trigger for the dawn of a global gas market, how unique are conditions within Africa?

*Prof. Phillip Llyod – Researcher, Cape Peninsula University of Technology*

09h45 – 10h30

### Key note address

- Regulatory Framework Policy Changes and the future of mining and the Shale Gas industry

Department of Mineral Resources (To Be Advised)

10:30 – 10h45

### Tea/Coffee break & Networking

10h45 – 11h30

### The Economic Potential of Shale Gas for South Africa

The three major policy objectives for the country are increasing employment, poverty alleviation and raising the standard of living. Without secure and competitively priced energy and electricity supplies South Africa's future economic growth will be slowed and the region's economic, social and political sustainability and stability may well be threatened. Recent potential natural and shale gas finds are a game changing economic opportunity for the country and its people. This presentation sets out how shale gas fits into the picture and the extent to which the country and all its peoples can benefit from the bounty that may have been given us.

- Major trends affecting future South African economic growth
- SA's electricity generating requirements
- Comparative cost of electricity by generating source
- Potential impact of Karoo shale gas deposits
- Key SA policy objectives and competitive issues
- Impacts of higher electricity prices on the SA economy
- Implications of the IRP 2010-50 Update 2013
- Energy sources & environmental concerns
- The role of various energy sources, including shale gas, in the energy mix

*Rob Jeffrey – Econometrix Managing Director*

11h30 – 12h15

### A commonality of benefit and risk - Fruit of the poisoned tree

Spanning cultures and continents, shale gas is typified by a commonality of benefit and risk. Energy, jobs, revenue, and the reduction of greenhouse gas emissions are four key areas that arrest the attention of any government. Stacked against the elephant in the room - the risk of environmental, and ultimately economic damage - these considerations project shale gas into a ranking as the most widely debated fossil fuel in more than two hundred years. Four primary areas define the broad environment in which we approach a discussion on shale gas: community, environment, development and sustainability Economics, climate change, science, politics and corporate goals

*Jonathan Deal is founder and CEO of Treasure Karoo Action Group*

12h15– 13h15

### Lunch & Networking

13h15 – 14h-00

### New conventions for unconventional oil and gas: How upstream gas can work smarter.

Shale gas companies are developing thousands of well sites, and the scale, geography and complexity is challenging traditional management approaches. There is a need to consider what is not working across the shale gas value chain - what improvement opportunities should be pursued? Growing competition in the gas market is driving the need for upstream players to work smarter to reduce cost - what can we learn from the international players? What are the key themes from shale development in the US that should be replicated locally?

*Chris Bredehann – PWC Director Oil and Gas*

14h00 – 14h45

### Groundwater Characteristics of Karoo Aquifers and the Deeper Underlying Formations: Known's and Unknowns

- Groundwater characteristics of shallow (<300 m), strategically important Karoo aquifers relatively well known
- Groundwater characteristics of the deeper underlying formations and their possible connectivity to the shallow aquifers is largely unknown/speculative
- Need to assess and manage risks to valuable groundwater resources

*Peter Rosewarne –Principal Hydrogeologist, SRK*

14h45 – 15h30

### Shale Gas: Opportunities and Risks

Several African countries have potentially viable shale gas deposits, which, if developed, could lead to lower gas prices, increased consumption of natural gas, reduced greenhouse gas emissions from power generation and substantial economic benefits to producer countries, finds a report launched today by the African Development Bank (ADB). This panel discussion will look at how not only Africa , South Africa as economies can benefit - but it will also look at specifically how women can participate and benefit from the lucrative discoveries of shale gas around Africa and particularly in relation to the recent allowance by government for fracking for gas in the Karoo.

- Shale gas; risks and opportunities for Africa
- Identifying business, employment , economic growth opportunities
- Legalities and risks associated with shale gas
- Availability of financing gas operations in Africa

*Dr. Luke Havemann - Senior Associate - Oil and gas Edward Nathan Sonnenbergs*

15h30 - 15h45

### Afternoon tea/coffee & Networking

15h45 – 16h30

### Open Discussion:

Shale gas exploration and exploitation suffers from public acceptance issues in South Africa. It is seen as a challenge to extract shale gas and to benefit from its economic potential while preserving responsible stewardship of the environment and public health. This open discussion will delve into the pros and cons for exploiting this resource.

Topics:

- Pro & Ant-Shale Groups – Is there a Winner and a Loser
- Cost Implications – Is there ROI
- Vision – Now & Beyond...
- Politics, Businesses, Stakeholders & the Public – Can there be “common grounds”

End of day 1 (closing remarks by Chairperson)

## DAY 2

08h30 – 09h00

### Registrations

09h00 – 09h30

### Welcome and Opening Remarks by Chairperson

09h30 – 10h15

### **An analysis of the provisions of the updated Mineral and Petroleum Resources Development Act 28 of 2002 and the amendments proposed in terms of the MPRDA Amendment Bill.**

On 27 December 2012 the South African Cabinet approved the draft Mineral and Petroleum Resources Development Amendment (MPRDA) Bill, 2012. Although the Bill is still in draft form, the Department of Mineral Resources (DMR) has invited interested parties to make written submissions on the Bill by 8 February 2013.

The Draft Amendment Bill amends the MPRDA as if the Mineral and Petroleum Resources Development Amendment Act, 2008 is in force, although the Amendment Act has never been brought into effect.

There are dramatic amendments in the Draft Amendment Bill which potentially could have a major impact on stakeholders in the mining industry and will be discussed in this talk.

*Patrick Leyden – Partner Mining Energy and Natural Resource, Webber Wentzel*

10:15 – 10h30

### Tea/Coffee break & Networking

10h30 – 11h30

### **The governance of the shale gas revolution in South Africa**

Many have labelled the Karoo's shale gas reserves as a potential “game-changer” for the South African energy sector. The US experience has been labelled a “shale gas revolution”. Many question whether the US experience can be replicated in South Africa. Considering the EIA's estimate of 390 trillion cubic feet (tcf) in (unproven) technically recoverable shale gas resources, the potential for economic gains does exist. However, shale gas development/production holds both economic advantages and potential environmental costs. For this reason, regulation of fracking activities is a crucial aspect to consider if the Karoo's shale gas is to be developed. This paper reviews the regulation imposed in other countries as well as the current regulatory framework for South Africa. Regulation is considered in terms of three factors, namely: the content of fracking fluid, seismic activity and the pricing regime. Effective regulation will be a key determinant of the overall positive or negative impact on the South African economy.

*Geoffrey Chapman – Trade Economist, SABS*

*Requier Wait – Lecturer, School of Economics, North-West University*

11h30 – 12h15

### **Environmental Exaggeration**

Extreme Environment promises to provoke fresh – and spirited – debate about the modern environmental movement and the many ways in which environmentalism, media, economics, public policy and the politics of liberty intersect.

In order to reduce poverty and continue to raise living standards requires a sensible, balanced approach to a healthy, productive environment. No country, but especially not those in the developing

world, can afford to be manipulated by the self-interested moralising and alarmism perpetrated by some special interest groups. Exaggeration by environmentalists, many journalists and even some scientists causes undue fear and anxiety among those who don't already dismiss the green lobby for crying wolf. Worse, misinformation affects regulation and policymaking in ways that actively harm developing economies.

*Ivo Vegter, Author Extreme Environment*

12h15 – 13h00

### **Cace Study: Intra-Governmental Shale Gas Task Team Findings.**

Shale gas exploration has been one of the most controversial issues to have entered the environmental consciousness in recent years. The lifting of the moratorium on exploration activities will trigger the debate once more as to whether the economic benefits have been weighed against the associated environmental risks. This report is the inevitable response to this debate.

Should the moratorium be lifted, the National Department of Mineral Resources will be able to consider and decide on applications for exploration for shale gas in the Karoo Basin. The merits of each application will have to be considered with due regard to the respective impacts of the exploration processes and the relevant regulatory processes.

With a focus on responsible governance, Provincial Minister Local Government, Environmental Affairs and Development Planning Anton Bredell of the Western Cape commissioned a unit to report on the implications of shale gas extraction in the Western Cape and specifically the Central Karoo District

*Paul Hardcastle, Director Planning and Policy Coordination, Western Cape Department of Environmental Affairs & Development*

13h00– 14h00

### Lunch & Networking

14h00 – 14h-45

### **Shale Gas Exploration and Extraction Strategies**

- Horizontal drilling and hydraulic fracturing
- ‘Clean’ shale gas extraction technique
- Environmental Impacts of Shale Gas Extraction
- Drilling and Hydraulic Fracturing (Implementing successful shale gas projects)

*Koos Joordann, Executive Technical Director, Master Drilling Group*

14h45 – 15h30

### **Open Discussion: Four Questions on Shale Gas**

Topics:

- Can a South African shale gas boom happen?
- What is the most likely course of future shale gas
- What are largest sources of uncertainty regarding future development in Europe
- What is the state of analytical debate in Africa over the likely course of shale gas or tight oil developments

15h30 - 15h45

### Afternoon tea/coffee & Networking

15h45 – 16h00

### Open Discussion conclusion...

16h00

### Closing remarks by Chairperson

## END OF CONFERENCE

# REGISTRATION FORM SHALE GAS CONFERENCE



## R7490

PER DELEGATE

Cost, excl VAT pp

23rd & 24th July 2014  
THE FOCUS ROOMS,  
Sunninghill, Johannesburg, RSA

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Please complete and return this form to Duncan

### Authorising Person:

First Name:		Surname:	
Company / Organisation:		Designation:	
Phone:		Fax:	
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Person dealing with Accounts:		Country:	
Email Address:			
<b>Signature:</b>			<b>Date:</b>

By completing & signing this form, the authorising signatory accepts the terms and conditions as stated on the registration form

### Delegate Attendance Information:

Note: Please provide information as you wish it to appear on your name badge and on the official participant database.

Title	Delegate Name & Surname	Position	Email

Company VAT No.	4870237817	Name of Bank	First National Bank (SA)
Branch name	FNB - Randburg Square	Branch Code	261 - 750
Account name	Amabhubsesi Training CC	Account number	62134658155
Reference	Insert your ref number on the deposit slip please		

Registration fees above include the following entitlements: Entrance to sessions, registration pack, daily lunch and refreshment breaks.

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