

FRACKING: AN ENERGY DREAM COME TRUE OR AN ENVIRONMENTAL NIGHTMARE?

Henry Lerm

Dip (Industrial Admin) BProc LLB LLM LLD

Justice Centre Executive

Legal Aid South Africa, Uitenhage

SUMMARY

This article investigates the judicial approach the courts are likely to take when they are asked to decide whether hydraulic fracturing, otherwise known as “fracking”, is an acceptable technique or not. The main focus of this article is to investigate whether the legislation put in place is consistent with the constitutional provisions aimed at protecting, on the one hand, the right to a healthy environment, health and life, and on the other hand, the right to promoting justifiable economic and social development. What will be considered is where these rights are likely to come into conflict with each other and how the courts are likely to deal with the issue. Prefacing this discussion is a brief investigation into the nature of fracking; the legislation that will govern the process and the constitutional rights likely to be effected by the technique.

1 INTRODUCTION

Few subjects the world over have divided people on such a large scale than hydraulic fracturing, otherwise known as “fracking”. So, when the people of the Karoo rally together at public gatherings and declare “This is God’s country”, denouncing the idea by emotionally asserting “It’s like you coming and drilling holes in our mother, and then leaving us to look after her and take her to hospital; leave the Karoo alone!!!”,¹ they are no different from citizens in Pennsylvania in the United States of America or Somerset in England. But, despite that the Karoo has been identified as an ideal site and the first exploration efforts are not far off.

This article looks briefly at the origin and development of fracking; the process itself; the legislative enactments and regulations likely to control the process; what constitutional rights are likely to be affected by fracking. The article will reveal that, when the fracking debate ascends into our courts and rights issues are addressed, a conflict between certain constitutional rights are likely to emerge. This article provides a suggested framework for the adjudication process by the courts.

¹ See Du Toit “Fracking the Karoo The People Say No!” Somerset East (31 Jan. 2012) <http://www.karoospace.co.za/karoo-space-magazine/talking-point/100-fracking-thekaroo-the-people-say-no> (accessed 2013-10-15).

2 ORIGIN AND DEVELOPMENT OF FRACKING

The method to stimulate shallow, hard rock oil wells was founded by oil producers in the 1860s in Pennsylvania, United States of America. The technique has over time used different substances, including nitro-glycerine, acid and water. Hydraulic fracturing was first experimented with in 1947, but it was really in 2010 when it was commercially executed on a large scale in the United States of America.² The idea was extended to other countries, including Germany, Australia, China, Canada and Denmark.³ But, it was met with great resistance in Europe and elsewhere. France, for example, placed an outright ban in 2011.⁴ The threat to the environment became one of the primary concerns in Germany⁵ and the United Kingdom.⁶ The process was temporarily banned in both countries, but the United Kingdom has since lifted the moratorium and it has just been announced that licences are being awarded to successful explorers. Still, great resistance is shown all over England. Similarly, the South African Government, believed to be one of the biggest financial beneficiaries,⁷ removed the moratorium once placed in South Africa. But environmental activists, including the Treasure the Karoo Action Group, the Centre for Environmental Rights (“CER”), Sustainable Alternatives to Fracking and Exploration Alliance (“SAFE”) and the Southern Cape Land Committee, fearing that ills will be brought to the environment, peoples’ health and even life, continue to oppose the idea. A renewed attempt has recently been made to have a new moratorium placed on fracking.⁸ The last salvo has thus not been fired, as both parties are likely to turn to the courts for relief.⁹

² See the “Fracking: How Risky for Us?” 26 May 2013 *Los Angeles Times Editorial, California* articles.latimes.com/2013/may/26/opinion/la-ed-fracking-legislation-california-20130526 (accessed 2013-10-15); and see also Zukerman “How Fracking Billionaires Built their Empires” 15 November 2013 *Quartz the Atlantic Media Company* quoted in *Wikipedia* <http://en.wikipedia.org/wiki/hydraulicfracturing> (accessed 2013-10-15).

³ See the *Wikipedia* “*Hydraulic Fracturing by Country*” <http://en.wikipedia.org/wiki/Hydraulic-fracturing-by-country> (accessed 2014-02-10).

⁴ See Patel “France to Keep Fracking Ban to Protect Environment, Sarkozy Says” 4 October 2011 *Bloomberg Business Week* quoted in *Wikipedia* <http://en.wikipedia.org/wiki/Hydraulic-fracturing-by-country> (accessed 2014-02-10).

⁵ See Nicola and Andersen “No Fracking in Germany for Now Backed in Merkel Coalition” 26 February 2013 www.bloomberg.com/news/2013-11-08 (accessed 2014-02-09).

⁶ See Bakewell “UK Government Lifts Ban on Shale Gas Fracking” 15 October 2013 *Bloomberg News* quoted in *Wikipedia* “Fracking” simple.wikipedia.org/wiki/Fracking (accessed 2013-09-12).

⁷ See Creamer “State will have 20% Free Stake in Shale Gas Exploitation – Minister” 14 October 2013 *Free Daily Mail University of the Witwatersrand, Johannesburg* <http://www.polity.org.za/article/state-will-have-20-free-stake-in-shale-gas-exploitation...> (accessed 2014-04-30).

⁸ See Preller “New Moratorium on Fracking Called for After Research” 23 July 2014 *The Herald* 9.

⁹ *Ibid.*

3 FRACKING AND THE PROCESS ITSELF

Fracking is a mining operation to extract natural gas, using a technique called hydraulic fracturing.¹⁰ The operation consists of the following method: The process begins with a borehole drilled to some 4 to 5 kilometers below the ground, cutting through many geological layers and aquifers. The shaft is then lined with steel and cement casing. Monitors above the ground signal when drilling should shift horizontally, boring sideways to pierce long-running sections of shale bedrock. Millions of litres of water, mixed with sand and chemicals are then blasted under high pressure into the bedrock, causing the cracking of rock deep underground. That then releases trapped natural gas, methane, from the shale. The gas and water mixture then flows back up to the surface where the gas is separated from the water. While most of the water stays in the well-bore, up to 20 per cent is either re-used for more fracking or injected into disposal wells thousands of feet underground.¹¹ The process is very water-intensive and more than 6 million litres of water is used to complete a fracked well.¹² What poses an even greater risk in the Karoo is that drilling will go beyond 5 kilometres.¹³

4 LEGISLATION AND REGULATIONS APPLICABLE TO FRACKING

The ground-breaking environmental conference in Stockholm in 1972 resulted in many governments facing up to their environmental responsibilities by creating legislation and/or incorporating that responsibility in their constitutions. South Africa is no different as measures have been introduced, both constitutionally and legislatively, to protect the environment. Because the process of hydraulic fracturing includes the use of land and water; industrial processes; energy generation; mining operations; chemical treatment and the like, all contribute to promote fracking operations, which will be monitored against the Constitution and legislative measures.

Some of the legislative measures can be found in the following legislative enactments. The National Environmental Management Act¹⁴ is central to the environmental right enshrined in section 24 of the South African Constitution. The Preamble to the Act guarantees “everyone the right to an environment not harmful to his or her health or well-being” by placing a duty on the State

¹⁰ Hydraulic fracturing is defined in the *Proposed Technical Regulations for Petroleum Exploration and Exploitation* published in the GG 36938 on 15 October 2013 as “injecting fracturing fluids into the target formation at a force exceeding the parting pressure of the rock to induce fractures through which petroleum can flow to the wellbore.”

¹¹ See Du Toit “Shale Gas Exploration of the Karoo – A Beginners Guide to Fracking” 10 May 2012 <http://www.karoospace.co.za/karoo-space-magazine/talking-point/102-shale-gas-expl> (accessed 2013-07-15); and see also Bambrick “Fracking: Pro and Con” 11 December 2012 *Tufts Now*, *Tufts University* <http://now.tufts.edu/articles/fracking-pro-and-con> (accessed 2014-02-11).

¹² See Boyer, Clark, Jochen and Lewis “Shale Gas: A Global Resource” Autumn 2011 23(3) *Oilfield Review* 28 https://www.slb.com/~media/Files/resources/oilfield_review/ors11/aut11/03_shale_gas_pdf (accessed 2014-07-19).

¹³ Du Toit Somerset East (31 Jan. 2012) <http://www.karoospace.co.za/karoo-space-magazine/talking-point/100-fracking-thekaroo-the-people-say-no> (accessed 2013-10-15).

¹⁴ Act 107 of 1998 (commonly known as “NEMA”).

“to respect, protect, promote and fulfil the social, economic and environmental rights of everyone”.¹⁵ The protection of the environment is both short-term as well as long-term.¹⁶ Any development therefore, has to be sustainable and includes the integration of social, economic and environmental factors in the planning, implementation and monitoring of decisions.¹⁷

The Environmental Conservation Act,¹⁸ as the name signifies, seeks to conserve and protect the environment. The Act also provides which activities should be subjected to impact assessments before they commence.¹⁹ They could include land use; water use and disposal; industrial processes; energy generation; chemical treatment and the like.²⁰

The National Water Act 36 of 1998 aims to meet the basic human needs of the present and future generations. These include the equitable access to water; facilitating social and economic development; reducing and preventing pollution and contamination of water resources.²¹ National Government is viewed as public trustee and custodian of the water resources.²² Where processes are water-intensified, for example, fracking, such water use must be authorized by the Minister of Water Affairs and Forestry.²³ The Minister’s decision could be influenced by, *inter alia*, the availability of water resources and the impact of fracking on our water.²⁴

The Water Service Act²⁵ guarantees access to basic water and sanitation, necessary to secure an environment not harmful to human health or well-being.²⁶

Because fracking is regarded as a mining operation, the process will also have to comply with the provisions of the Mineral and Petroleum Resources Development Act, as amended (MPRDA).²⁷ The Act includes a number of sections that give effect to rights entrenched in section 24 of the Constitution. The Minister, for example, who is the custodian of mineral rights can grant mining rights in respect of minerals, provided an environmental-impact assessment had been done.²⁸ To augment any gaps in the regulatory framework governing the hydraulic-fracturing process, the Minister published proposed technical regulations designed to control the

¹⁵ See the Preamble to the National Environmental Act 107 of 1998.

¹⁶ *Ibid.*

¹⁷ See s 1 of NEMA.

¹⁸ Act 73 of 1989.

¹⁹ See the Preamble to the Environmental Conservation Act 73 of 1989.

²⁰ See s 21, 22 and 23 of the Environmental Conservation Act 73 of 1989.

²¹ See the Preamble to the National Water Act 36 of 1998.

²² See s 3 of the National Water Act 36 of 1998.

²³ See “Fracking to Require Water use License-Molewa” 3 September 2013 *University of the Witwatersrand Johannesburg Free Daily Mail* <http://www.polity.org.za/article/fracking-to-require-water-use-license-molewa-2013/09/04> (accessed 2013-09-02).

²⁴ See *The Proposed Declaration Of The Exploration For And Or Production Of Onshore Unconventional Oil Or Gas Resources And Any Activities Incidental Thereto Including But Not Limited To Hydraulic Fracturing As A Controlled Activity* GG 36760 of 2013-08-13.

²⁵ See Act 108 of 1997.

²⁶ See s 2(a) of the Water Service Act.

²⁷ See Act 107 of 1998.

²⁸ See s 3 of Act 107 of 1998.

process of fracking.²⁹ The regulations call for *inter alia* environmental-impact assessments³⁰ and environment studies over the full cycle of the operations.³¹

Being a signatory to the *International Convention on Biological Diversity*,³² Government has passed legislation in the form of the National Environmental Management Biodiversity Act.³³ The Act contains a very important precautionary clause in that, where there is a threat of significant reduction or loss of biological diversity, but, inadequate or inconclusive scientific evidence is present to prove that, a cautionary approach is advocated.³⁴ This is aimed at specifically to protect the fauna and flora, endangered species and bird life in the Karoo.³⁵ The cautionary clause may serve as a handy indicator to the courts when confronted with interpreting an environmental issue such as fracking where insufficient research has been carried out in order to establish whether hydraulic fracturing is a safe method to extract gas from the rock formations.

The Promotion of Administrative Justice Act³⁶ aims to promote the constitutional right to just administrative action. Any administrative action which has the potential of affecting rights of individuals adversely, must follow fair procedures. Those whose rights may be negatively affected should be afforded every opportunity to oppose such steps or procedures.³⁷

5 CONSTITUTIONAL RIGHTS LIKELY TO BE AFFECTED

Impact studies the world over have revealed that of the rights most likely to be infringed by the process of fracking, is the right to a healthy environment.³⁸ Constitutionally, the protection of the environment has been incorporated in the South African Constitution.³⁹ The Constitution places a positive duty on the Government to protect the environment for now and generations to come.⁴⁰ A healthy environment in this context, includes

²⁹ See the *Proposed Technical Regulations for Petroleum Exploration and Exploitation* published by the Department of Mineral Resources in terms of the Mineral and Petroleum Resources Development Act 28 of 2002 GG 36938 of 2013-10-15.

³⁰ See s 3 of the Regulation.

³¹ See s 3(1) of the Regulations.

³² This treaty was adopted at the Earth Summit in Rio de Janeiro on 5 June 1993.

³³ See Act 10 of 2004.

³⁴ See s 75(2) of Act 10 of 2004.

³⁵ See Anonymous "Endangered Species" 2012 *Lonely Planet* <http://www.lonelyplanet.com/south-africa/wildlife/endangered-species> (accessed 2013-07-16).

³⁶ See Act 3 of 2000 (also known as "PAJA").

³⁷ See s 4(1) of PAJA. This section provides for "procedurally fair administrative action" including "the holding of public meetings".

³⁸ See Wiseman and Gradjan "Regulation of Shale Gas Development, including Fracturing" 2011 *SSRN* <http://www.ssrn.com/abstract=1953547> (accessed 2014-06-01) and repeated in Van Wyk "Fracking in the Karoo: Approvals Required?" 2014 *Stell LR* 34, 39; and see also De Wit "The Great Shale Debate in the Karoo" 2011 107(7/8) *South African Journal of Science* 791-799.

³⁹ See s 24 of the Constitution Act 108 of 1996.

⁴⁰ See s 24(b) of the Constitution calls for the prevention of pollution, promoting conservation and securing sustainable development.

human health care, free of illness or death; the preservation of plants and animals; an environment free of pollution and water contamination.⁴¹

What is key to a healthy environment is access to natural resources, including sufficiently clean water.⁴² To this end, socio-economical rights including health care, food, water and social security are guaranteed.⁴³ The protection and promotion of these rights extend specifically to children who are guaranteed a right to basic nutrition.⁴⁴

The right to life⁴⁵ is sometimes adjunct to a right to a healthy environment. With the exception of human dignity, there is no other right enshrined in our Constitution that is more constitutionally protected than the right to life.⁴⁶ It is especially during well suspension and abandonment that scientists have cautioned that this period poses a great risk to life.⁴⁷

The other constitutional rights most likely to be adversely affected, include the right to have one's right to dignity⁴⁸ and physical integrity⁴⁹ respected and protected. The contamination of water, resulting in unnecessary bouts of diarrhea, dizziness, muscle spasms and other problems, may very well impact on those rights.

Public participation in all decisions taken regarding the exploration of shale-gas fracturing is a very important stage of the fracking programme. Here, the Constitution expects the Government to follow transparent and reasonable procedures involving all administrative decisions.⁵⁰ Those sections may be used by community groups to establish the effects of fracking on their lives and well-being.⁵¹

Exponents of the pro-fracking programme will find much of importance in the following constitutional rights to advance their cause. Section 9 affords

⁴¹ See s 24(a) of the Constitution provides that "everyone has the right to an environment that is not harmful to health or well-being".

⁴² See s 25(4)(a) of the Constitution.

⁴³ See s 27(1)(b) of the Constitution.

⁴⁴ See s 28(1) of the Constitution.

⁴⁵ See s 11 of the Constitution deals with the right to life which is an absolute, unqualified and inalienable right.

⁴⁶ See *S v Makwanyane* 1995 (3) SA 391 (CC), 1995 (6) BCLR 665 (CC) par 144; and for a very instructive discussion on the right to life see Chaskalson, Marcus and Bisho *Constitutional Law of South Africa* (1996) 15-1.

⁴⁷ See Lakani "Could the Benefits of Fracking Outweigh the Disadvantages?" *Answer It* <http://answerit.news24.com/Questionscould%20the%20benefits%20of%20fracking%...> (accessed 2014-02-14); and see, however, Regulations 47,48 and 49 in Chapter 5 on the management plans put in place to counter the risks associated with well suspension and abandonment.

⁴⁸ See s 10 of the Constitution.

⁴⁹ See s 12(2)(b) of the Constitution; and see also Pejan, Du Toit and Pollard "Using Progressive Realization and Reasonableness to Evaluate Implementation Lags in the South African Water Sector" 27 October 2011 Paper presented to the Water Research Commission.

⁵⁰ See s 32 of the Constitution regarding access to information; see also s 33 that guarantees reasonable and fair administrative action; and see also Murombo and Valentine "SLAPP Suits: An Emerging Obstacle to Public Interest Environmental Litigation in South Africa" 2011 27 SAJHR 82 90.

⁵¹ See *The Director, Mineral Development Gauteng Region and Sasol Mining (Pty) Ltd v Save the Vaal Environment and Others* 1999 (2) SA 709 (A).

individuals the right to “equal protection and benefit of the law”.⁵² This section also promotes equal enjoyment of all rights and freedoms, including “economic rights” and “freedom and security of person”.⁵³ Bearing in mind the potential benefits that the fracking may bring with it, including job creation, cheaper energy and increased revenue, spending on education, health and infrastructure will benefit all South Africans, equally. These benefits also encompass the right to “economic freedom”.⁵⁴

Section 25 of the Bill of Rights deals with property rights, including land rights. The said section provides that “no-one may be deprived of property except in terms of law of general application”.⁵⁵ To allow mining operations to take place on private property without an owner’s consent, would amount to an unconstitutional infringement.⁵⁶ Where the property is State-owned, a compelling argument may well be made out why the exploration of shale gas should take place. Job creation, cheaper energy, increased Government revenue and the realization of socio-economical rights are some of the factors likely to be advanced.

6 CONTENTIONS LIKELY TO BE RAISED BY THE PARTIES

6.1 Anti-fracking contentions

Although it is uncertain to predict what legal issues are likely to be raised in opposition to the gas exploration and exploitation, it is likely that anti-fracking lobbyists may well assert that the constitutional imperatives⁵⁷ and legislative requirements⁵⁸ in respect of the consultation process involving the public, had not been met by Government and/or organs of State.⁵⁹ The principle of thorough consultation before decision-making, has wide international recognition.⁶⁰ Whether or not the applicants will succeed is a question of fact and must be decided as such.⁶¹

But, the attack most likely to come against the Government and/or organs of State would emanate from their approval of the technology, without greater certainty whether the process is suitable to the South African

⁵² See s 9(1) of the Constitution.

⁵³ See s 9(2) of the Constitution.

⁵⁴ See s 22 of the Bill of Rights of the Constitution which provides that every citizen has the right “to choose their trade, occupation or profession freely”.

⁵⁵ See s 25(1) of the Constitution.

⁵⁶ *Ibid.*

⁵⁷ See s 32 (access to information) and s 33 (right to be listened to) of the Constitution.

⁵⁸ See s 2 of *NEMA* regarding the public’s involvement in the decision-making process. Section 2(4)(f) sets out the procedure; see also the National Water Act 36 of 1998 regarding fracking been declared a controlled activity for water use; see further the Mineral and Petroleum Resources Development Act 28 of 2002 as amended providing the sharing of the effect of the regulations with the general public.

⁵⁹ See Preller 23 July 2014 *The Herald* 9.

⁶⁰ See Birnie and Boyle *International Law & the Environment* 2ed (2002) 86; and Van Wyk 2014 *Stell LR* 43.

⁶¹ See *Bato Star Fishing (Pty) Ltd v Minister of Environmental Affairs and Tourism* 2004 (4) SA 490 (CC); (2004) (7) BCLR 687 par 48 and 49.

conditions or not. In this regard there appears to be a lack of research evidence on fracking.⁶² It is believed that the Nelson Mandela Metropolitan University is currently engaged in a scientific study into a three-year shale-gas research project at a cost of R16-million.⁶³ Of great use to the debate could be that the thrust of the argument could go around the controversial drilling technique and its consequences. Scientists believe that breaking up rocks deep underground under high pressure, creates cracks in the rock formation, causing a permanent disturbance, inducing seismicity.⁶⁴ That may also lead to the escape of radioactive elements, posing a significant risk to the environment as valuable water resources, including aquifers, rivers, wetlands and existing drinking water may be contaminated.⁶⁵ The threat of gas emissions through venting and leaks poses a further risk to air quality.⁶⁶ So is the fear that chemical-filled water flowing up to the surface will end up becoming wastewater, thus replenishing our ground-water reserves.⁶⁷ Because water is such a scarce commodity in the Karoo, that will ultimately lead to a shortage of supply of water for human and animal consumption, as well as aquatic life.⁶⁸

International studies have outlined also that the release of cancer-causing chemicals such as benzene and methane may be catastrophic to human health and safety.⁶⁹ The illnesses include headaches, diarrhea, dizziness and muscle spasms.⁷⁰ It could cause cancer, result in kidney and liver

⁶² See Van Wyk 2014 *Stell LR* 37 with reference to De Wit 2011 107(7/8) *South African Journal of Science* 791–799; Dhliwayo “Fracking in the Karoo: A Step in the Right Direction?” 16 November 2012 http://www.consultancyafrica.com/index.php?option=com_content&view=article&id=9 (accessed 2014-02-10).

⁶³ See the recent article on fracking in Preller 23 July 2014 *The Herald* 9.

⁶⁴ See Donnelly “Fracked if you Do, Fracked if you Don’t” 11 November 2011 *Business Mail & Guardian* <http://mg.co.za/article/2011-11-11-fracked-if-you-do-dont> (accessed 2014-02-11).

⁶⁵ See Van Wyk 2014 *Stell LR* 37–38.

⁶⁶ See Howarth, Santoro and Ingraffea “Methane and the Greenhouse-gas Footprint of Natural Gas from Shale Formations” 13 March 2011 <http://www.springerlink.com/content/e38422wr4160653/fulltextpdf> (accessed 2013-09-13); and see also Springer “Climate Change” 7 May 2012 106(4) 679–690 quoted in Wikipedia “Environmental Impact of Hydraulic Fracturing” http://en.wikipedia.org/wiki/Environmental_impact_of_hydraulic_fracturing (accessed 2014-02-05).

⁶⁷ See Van Wyk 2014 *Stell LR* 50; Bambrick 11 December 2012 *Tufts Now, Tufts University* <http://now.tufts.edu/articles/fracking-pro-and-con> (accessed 2014-02-11); Graham “Fracking for Natural Gas, the Benefits and the Risks” 26 April 2012 speech made to a Religious Action Center of Reform Judaism and repeated on the *Michigan Radio* <http://michiganradio.org/post/fracking-natural-gas-benefits-and-risks> (accessed 2014-02-10).

⁶⁸ See Urbina “Hunt for Gas Hits, Fragile Soil, and South Africans Fear Risks” 3 March 2011 <http://www.nytimes.com/2011/12/31/world/south-african-farmers-see-threat-from-fracking.html> *The New York Times* quoted in Wikipedia “Environmental Impact of Hydraulic Fracturing” http://en.wikipedia.org/wiki/Environmental_impact_of_hydraulic_fracturing; and see also Creamer “Not without risk” 4 April 2014 *Polity* <http://www.polity.org.za/article/not-without-risks-2014-04-04> published (accessed 2014-04-07).

⁶⁹ See Fourie “Position Statement on Protection of Environment Rights in Decisions around Fracking for Shale Gas” 13 August 2012 CER <http://cer.org.za/position-statement-on-protection-of-environmental-rights-in-decisions-around-fracking-for-shale-gas/> repeated in Van Wyk 2014 *Stell LR* 38.

⁷⁰ See Eastern Research Group, Sage Environmental Consulting 13 July 2011 City of Fort Worth: Natural Gas Air Quality Study (Report) City of Fort Worth; and on 7 May 2012 quoted in Wikipedia “Environmental Impact of Hydraulic Fracturing” http://en.wikipedia.org/wiki/Environmental_impact_of_hydraulic_fracturing (accessed 2014-02-10).

failure⁷¹ and may even lead to loss of life.⁷² Besides human life, livestock, wild animals, as well as aquatic life, are particularly vulnerable. So is the serious ecological damages and long-term destruction of ecosystems.⁷³ The environment it is feared, will ultimately be compromised.⁷⁴

6 2 Pro-fracking contentions

On the other side of the coin, the Government and those private companies who have an interests in fracking, are likely to argue that the technique is not such a great threat to the environment. South Africa, being in a desperate need to keep up with energy demands, instead, is under pressure to find new, cheaper and cleaner energy sources than coal. Fracking will provide a cleaner energy source with lower carbon emissions than coal; thus meeting the standards set by the Copenhagen Accord.⁷⁵

It is said that fracking would have a substantial and benefiting impact on job creation in a country where the unemployment rate is so high.⁷⁶ The generation of a large source of revenue would help to reduce poverty; ensure socio-economic empowerment in the educational and health sectors⁷⁷ and promote infrastructural development.⁷⁸ That should take South Africa a step closer to meeting the United Nations Millennium Development

⁷¹ See Zoback, Kitasei and Copithome "Addressing the Environmental Risks from Shale Gas Development" July 2010 *Report to the World Watch Institute* 9 quoted by Wikipedia (see fn 66 above).

⁷² See Graham 26 April 2012 speech made to a Religious Action Center of Reform Judaism and repeated on the *Michigan Radio* <http://michiganradio.org/post/fracking-natural-gas-benefits-and-risks> (accessed 2014-02-10); and see also Allen "The Big Fracking Deal: Marcellus Shale – Pennsylvania's Untapped Resource" 2012 23 *Va Env'tl LJ* 1 8 <http://digitalcommons.law.villanova.edu/elj/vol23/iss1/3> (accessed 2013-01-02).

⁷³ See Dhliwayo 16 November 2012 http://www.consultancyafrica.com/index.php?option=com_content&view=article&id=9 (accessed 2014-02-10).

⁷⁴ See "FAQs-Earthquakes, Faults, Plate Tectonics, Earth Structure: Can we Cause Earthquakes? Is there a Way to Prevent Earthquakes?" 27 October 2009 *USGS* quoted in Wikipedia "Environmental Impact of Hydraulic Fracturing" http://en.wikipedia.org/wiki/Environmental_impact_of_hydraulic_fracturing (accessed 2014-02-05); and see also Bambrick 11 December 2012 *Tufts Now, Tufts University* <http://now.tufts.edu/articles/fracking-pro-and-con> (accessed 2014-02-11).

⁷⁵ See King "Shale Gas Energizes Government" 14 September 2012 *Mail and Guardian mg.co.za/?article/2012-09-14-00-shale-gas-energizes-government* (accessed 2013-09-15).

⁷⁶ See Dhliwayo 16 November 2012 http://www.consultancyafrica.com/index.php?option=com_content&view=article&id=9 (accessed 2014-02-10).

⁷⁷ See Donnelly 11 November 2011 *Business Mail & Guardian* <http://mg.co.za/article/2011-11-11-fracked-if-you-do-dont> (accessed 2014-02-11).

⁷⁸ See Hedden "Fracking for Shale Gas in South Africa: Blessing or Curse?" 23 January 2014 *Institute for Security Studies* <http://www.polity.org.za/article/fracturing-for-shale-gas-in-south-africa-blessing-or-cur...> (accessed 2014-01-24); see also Smith "Proposed Fracking in South Africa Beauty Spot Blasted" 23 August 2013 *The Guardian* <http://www.theguardian.com/world/2013/aug/23/south-africa-fracking-karoo> (accessed 2014-02-10); see also Dhliwayo 16 November 2012 http://www.consultancyafrica.com/index.php?option=com_content&view=article&id=9 (accessed 2014-02-10); see also Garrett "The US Environment Outlook – The Latest Legal Features, Research and Legal Profiles – Who's Who Legal" 8 August 2013 *Law Business Research* whoswholegal.com/news/features/article/30688/the-us-environmental-outlook/ (accessed 2014-04-01); and see further Twine "Get Cracking on Fracking" 2 March 2012 *Economist News 24* <http://www.news24.com> (accessed 2014-03-13).

goal target of poverty reduction in 2015 and beyond.⁷⁹ That in turn, will also help to redress the inequality left by the *apartheid* regime.⁸⁰

It may well be argued that the environmental danger, mooted by exponents of anti-fracking, represents an unjustifiable hindrance to much needed social development and economic advancement. Government may assert that it has put in place sufficient legislation to protect the environment and the public against any risk of harm.⁸¹ Support for this may be found in the Government's attempt to reinforce the legislative requirements by introducing regulations "to augment gaps identified in the current regulatory framework governing *inter alia* hydraulic fracturing ..."⁸²

The draft regulations among other things, provide mechanisms to assess the impact fracking may have on the environment, fresh-water resources and biodiversity. They include *inter alia* geological and geo-hydrological assessments prior to a well design and seismicity assessments prior to conducting fracking operations.⁸³ Other controls include water management,⁸⁴ waste-management plans⁸⁵ and management plans to prevent spillage and fugitive emissions.⁸⁶ The regulations provide plans for emergency situations⁸⁷ and contingency plans to minimize any risk where adverse predictions are established.⁸⁸

But, unless those gaps are satisfactorily addressed to guarantee a healthy environment, free from causing ill health, it may well be argued that the draft regulations in their present form are inadequate. The Cape Town-based Centre for Environmental Rights, after considering the proposed fracking-technical regulations,⁸⁹ found that the regulations are, however, "inadequate and flawed". Some of the shortcomings identified include that nothing is built into the present regulations to hold fracking companies to account for any mishaps or negligence; there are no effective means for "public participation in the fracking debate". The Centre is very critical of the reliance placed by the South African Government on the industry standards published by the American Petroleum Institute (API), for the oil and natural-gas industry.

⁷⁹ De Wit 2011 107(7/8) *South African Journal of Science* 791–799 www.sajs.co.za/sites/default/files/publications/html/791-5697-2-PB.html (accessed 2013-11-13).

⁸⁰ See the South African Catholic Bishops' Conference Parliamentary Liaison Office Participating in Public Policy Project 3: "Employment and Poverty Alleviation" 1 October 2012 <http://www.cplo.org.za/?=83> (accessed 2014-04-25).

⁸¹ See the National Environmental Management Act 107 of 1998 as amended; the Environmental Conservation Act 73 of 1989, the National Water Act 36 of 1998; the Mineral and Petroleum Resources Development Act 107 of 1998 as amended; the Water Service Act 108 of 1997; and National Environmental Management Biodiversity Act 10 of 2004.

⁸² See the Preamble to the Regulations.

⁸³ See s 6(1) of the Regulations.

⁸⁴ See Regulation 30(5).

⁸⁵ See Regulation 40.

⁸⁶ See Regulations 43 and 44.

⁸⁷ See Regulations 43(3) and 44(1).

⁸⁸ See Regulation 3(2)(k).

⁸⁹ See the GG 36938 of 2013-10-15.

Instead, the Centre argues, reliance should have been placed on international standards and best practices.⁹⁰

7 POSSIBLE JUDICIAL APPROACH TO FRACKING

The dispute will probably take the form of review proceedings on motion application. The court would then be obliged to resolve the issues between the parties by following the approach set out in *Plascon-Evans Paints Ltd v Van Riebeeck Paints (Pty) Ltd*⁹¹ and decide the case on “those facts averred in the applicant’s affidavits which have been admitted by the respondent, together with the facts alleged by the respondent, justifying such an order”.⁹² The final relief is generally decided on the respondent’s version.⁹³

The question that falls to be decided is whether the fracking technique will have a damaging effect on the environment, causing harm to human, animal and aquatic life. The acceptance or not of the technique thus lies at the heart of the dispute between the parties.

7.1 Applying the law to the possible contentions

The central issue in all likelihood, will focus on the reasonableness or otherwise, of the authorities granting licences to prospective explorers and the impact the decision will have on the constitutional rights of those affected. Here, the court is obliged to apply the applicable legal principles against the backdrop of the Constitution.⁹⁴ Section 2 of the Constitution provides that our Constitution is “the supreme law of the Republic. Any law or conduct inconsistent with it, is invalid and the obligations by it must be fulfilled”.⁹⁵ It follows that any legislation or conduct in conflict with the Constitution, is invalid. “Conduct” in this sense, includes decision-making. A court is therefore, enjoined to invoke the *Constitution* as a prime source to assess such legislation or conduct. That, a court does by identifying if any of the constitutional rights provided for in the Bill of Rights⁹⁶ is likely to be adversely affected. But, those rights are never unlimited. But, only a “law of general application”, provided the limitation is reasonable and justifiable, can

⁹⁰ See Spath “SA’s new Fracking Regulations are Flawed” 30 December 2013 *News 24* <http://www.news24.com/Columnists/AndreasSpath/SAs-new-fracking-regulations-areflawed/News24> (accessed 2014-02-25).

⁹¹ 1984 (3) SA 623 (A).

⁹² See *Plascon-Evans Paints Ltd v Van Riebeeck Paints (Pty) Ltd supra* 634H–634I quoted in *BP Southern Africa (Pty) Ltd v MEC for Agricultural, Conservation, Environment and Land Affairs* 2004 (5) SA 124 (W) 135H–136A.

⁹³ See *Ngqumba v Staatspresident* 1988 (4) SA 224 (A) 261B and 263D; and *Rawlins v Caravan Truck (Pty) Ltd* 1993 (1) SA 537 (A) 541J–542B.

⁹⁴ See *Fuel Retailers Association of South Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment Mpumalanga Province* 2007 (6) SA 4 (CC) 39 par 101.

⁹⁵ See s 2 of the Constitution.

⁹⁶ S 7 of the Constitution, *inter alia*, affirms the democratic values of “human dignity, equality and freedom” and directs that the State must “respect, protect, promote and fulfil the rights in the Bill of Rights”.

validly be limited.⁹⁷ Section 36 of the Constitution therefore plays an important role when courts have to balance certain constitutional interests.

To some scientists, fracking poses a serious threat to the environment. If they make out a compelling argument, our courts will not hesitate to protect those adversely affected by the threat.⁹⁸ It has been stated before that the importance of the protection of the environment, cannot be gainsaid.⁹⁹ To this end, the framers of the Constitution impose a duty on the Government to put into place measures aimed at protecting the environment from degradation.¹⁰⁰ Our courts have recognized that environmental considerations, often ignored in the past, have today been given a rightful prominence by their inclusion in the Constitution.¹⁰¹

On the other hand, the court will have to add weight to the Government's argument that it has put sufficient measures in place to minimize the risk to the environment. It may argue that it is not only the environment that the court should look to for resolving environmental issues. Economic and social interests should receive equal protection.¹⁰² The National Environmental Management Act,¹⁰³ under the principle of sustainable development, requires that the Government "will consider social, economic and environmental factors when planning, implementing and evaluating decisions taken".¹⁰⁴ Allied to that is the argument that, given our unfulfilling past and the inequalities that still exist, there is an urgent need for socio-economic growth today.¹⁰⁵

Besides considering the provisions of NEMA and the accompanying regulations the court will also have to consider the provisions of the National Water Act¹⁰⁶ to ensure that enough has been done to protect the environment and encourage social and economic development.¹⁰⁷ But, development at all costs, is also taboo. This is made clear in the Mineral and Petroleum Resources Development Act.¹⁰⁸ While the Act does recognize the

⁹⁷ See s 36 or so-called limitation clause in the Constitution.

⁹⁸ See s 24 of the Constitution.

⁹⁹ See *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province supra* par 102.

¹⁰⁰ See s 24 (b)(iii) of the Constitution.

¹⁰¹ See *Director: Mineral Development, Gauteng Region and Sasol Mining (Pty) Ltd v Save the Vaal Environment supra* 719C–719D.

¹⁰² See Church "A South African Perspective On Balancing Interests: Economic, Environmental And Social" 2013 *Journal of the Australasian Law Teachers Association* 65 67.

¹⁰³ See s 2(4)(o) of NEMA provides: "the environment is held in public trust for people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the peoples' common heritage".

¹⁰⁴ See the Preamble to NEMA in conjunction with s 1(1) of the Act.

¹⁰⁵ See Murombo and Valentine 2011 27 *SAJHR* 85; and see also the South Africa's White Paper on *National Strategy for the Development and Promotion of Small Businesses in South Africa* Government Notice 213 (1995); and the National Small Enterprises Act 1996 (South Africa) quoted by Church 2013 *Journal of the Australasian Law Teachers Association* 67.

¹⁰⁶ See Act 36 of 1998.

¹⁰⁷ See *MEC, Department of Agriculture, Conservation and Environment v HTF Developers (Pty) Ltd* 2008 (2) SA 319 (CC) par 65.

¹⁰⁸ See Act 28 of 2002 also known as MPRDA.

development of mineral and petrol resources, it does not give a free rein to Government or developers. What is called for is that a balance be struck between development and conservation.¹⁰⁹ Such an approach would be consistent with the Constitution which is rooted in the economic, social and environmental circumstances of the country.¹¹⁰ Our courts therefore have to strike a fine balance between environmental protection and the promotion of economic and social development.¹¹¹

But, striking a balance between the constitutional rights by the courts is not such an easy task as those rights represent different interests. Balancing them may lead to tension from within the realm of those rights. The difficulty lies in deciding sometimes which of the rights should be given the greater weight. In deciding whether the fracking technique is acceptable or not, the Constitution enjoins the courts to protect the environment from degradation, but, simultaneously to advance socio-economic rights.¹¹² It is a rather strange phenomenon as the rights affected are subsumed under one broader right, namely the environment.¹¹³ Unlike a situation where conduct maybe adjudged to affect pollution and ecological degradation,¹¹⁴ here the court will have to exercise a preference for one of the rights in the substratum. This may not be without some difficulty. The case of *BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation, Environment and Land Affairs*¹¹⁵ may be instructive. In that case, the applicant sought the review and setting aside of a decision by the respondent to refuse the applicant's application for authorization to develop a filling station on one of its properties. The Department, in refusing the application relied *inter alia* on the protection of the environment as provided for by the Environment Conservation Act 73 of 1989. The applicant on the other hand, relied on the socio-economic considerations provided for in the Constitution.

The Court per Claasen J found that the right to a healthy environment is on a par with the right to freedom of trade, occupation, profession and property entrenched in the Constitution.¹¹⁶ None of them enjoyed priority over any other of them.¹¹⁷ The Court preferred an integrated approach when determining if the environment would be adversely affected or not.¹¹⁸ The

¹⁰⁹ See the Preamble to the Act particularly the Affirmation Clause; see also *BP Southern Africa (Pty) Ltd v MEC for Agricultural, Conservation, Environment and Land Affairs* *supra* 150C–D.

¹¹⁰ See s 24(b)(iii) of the Constitution.

¹¹¹ See s 24(b)(iii) of the Constitution which provides for the protection of the environment through sustainable development; and see also *Fuel Retailers Association of South Africa v Director General: Environmental Management Department of Agriculture, Conservation and Environment Mpumalanga Province* *supra* on the Constitutional Court's balancing approach to sustainable development.

¹¹² See s 24(b)(iii) of the Constitution.

¹¹³ *Ibid.*

¹¹⁴ See *Harmony Gold Mining Co Ltd v Regional Director: Free State, Department of Water Affairs and Forestry* [2006] SCA 65 (SA) par 17; and see also *Harmony Gold Mining Company Ltd v Regional Director: Free State Department of Water Affairs* [2014] 1 All SA 553 (SCA) par 19.

¹¹⁵ *Supra.*

¹¹⁶ 143B of the judgment with reference to s 22, 24 and 25 of the Constitution.

¹¹⁷ 143B–C/D of the judgment.

¹¹⁸ 151E of the judgment; and the integrated approach was re-emphasized in the case of *Fuel Retailers Association of Southern Africa v Director-General Environmental Management,*

Court suggested that, besides protecting the environment, our courts should likewise develop and protect the socio-economic interests.¹¹⁹ An equilibrium between the competing considerations needed to be sought.¹²⁰

Besides having to balance the protection of the environment on the one hand and the development of socio-economic interests on the other,¹²¹ our courts may also be asked to balance socio-economic rights where they come into conflict with each other.¹²² Because the protection of the environment is vital to the enjoyment of other rights contained in the Bill of Rights,¹²³ the environmental right must therefore be protected for the benefit of the present and future generations.¹²⁴ A safe environment is a universal human right, applicable to the whole world. Not surprisingly, NEMA¹²⁵ provides that the protection of the environment is a global responsibility and must be discharged in the national interest. This is consistent with international conventions,¹²⁶ aimed at a safe environment, thus ensuring that human and animal health and life are not being compromised.

Because the long-term effect of fracking is described by many scientists as harmful to health and well-being of human beings and animals, the process, unless executed in a safe way, would equally pose a threat to public health.¹²⁷ That ultimately affects the general welfare of a nation. The concept “general welfare” has its roots in the ancient legal maxim “*salus populi suprema lex esto*” which is generally translated as, “the health of the people should be the supreme law”.¹²⁸ Most countries place a premium on

Department of Agriculture, Conservation, Mpumalanga Province (2007) 10 BCLR 1059 (CC).

¹¹⁹ 156J–157A/B of the judgment.

¹²⁰ 157H of the judgment with reference *Bato Star Fishing (Pty) Ltd v Minister of Environmental Affairs and Tourism* 2004 (4) SA 490 (CC).

¹²¹ 144A of the judgment with reference to Sands *Principles of International Environmental Law* (1995) quoted in Glazewski “Environment Rights” in Cheadle, Davis and Haysom *South African Constitutional Law: The Bill of Rights* (2002) 424. See also the *Fuel Retailers Association of South Africa v Director General: Environmental Management Department of Agriculture, Conservation and Environment Mpumalanga Province supra* (CC) par 102.

¹²² See *Minister of Public Works v Kyalami Ridge Environmental Association* (2001) 7 BCLR 652 (CC) regarding balancing the rights to housing and the right to a healthy environment to prevent homelessness.

¹²³ See, *inter alia*, the right to dignity (s 10); the right to life (s 11); the right to health care (s 27).

¹²⁴ See the *Fuel Retailers Association of South Africa v Director General: Environmental Management Department of Agriculture, Conservation and Environment Mpumalanga Province supra* (CC) par 102, wherein the Constitutional Court with reference to a *Global Judges’ Symposium on Sustainable Development and the Role of Law* held in Johannesburg on 18–20 August 2002, emphasizes the role of the Judiciary in the protection of the environment.

¹²⁵ See s 2(4) of the Act 107 of 1998.

¹²⁶ See, *inter alia*, the *Universal Declaration of Human Rights* 1948; *International Covenant on Economic, Social and Cultural Rights* also known as *ICESCR* 1966. Article 12 explicitly sets out a right to health which includes access to safe and portable water and adequate sanitation, healthy occupational and environmental conditions <http://www.humanrights.org/the-human-rights->.

¹²⁷ See Pro Publica <http://www.propublica.org/article/the-epas-first-fracking-rules>.

¹²⁸ See the *maxim* founded by Cicero (106–43BC) which has universal recognition. For an instructive article see Sperber “Extreme Times, Extreme Demands – The Health of the People Should be the Supreme Law” 15 August 2013 *OpEdNews* www.opednews.com/articles/Extreme-Times-Extreme-Times-Extreme-Dem-by-Elliot-Sperber-130815-535.html (accessed 2013-12-14).

the health care of their citizens. Obstacles to public health, including air pollution, war and malnutrition, should be corrected as they run counter to the “supreme law”.¹²⁹ Fracking may well be included in this category if it can be shown that the technique compromises public health.

Public health should therefore be at the forefront when the fate of the fracking technique is finally decided by our court(s). Besides balancing economic and social interests with environmental considerations, the court(s) are enjoined to consider the other constitutional rights, including the right to life, health care, dignity and bodily integrity. They are perceived to be the most fundamental of all human rights.¹³⁰ If compromised, they may influence the general welfare of our nation.¹³¹

Given the fact that South Africa has introduced very sophisticated legislative measures, including regulations in an endeavor to take reasonable steps to prevent pollution, ecological degradation and to promote conservation, our court(s) will have to decide whether the measures taken suffice to bring about a safe fracking process. Because fracking is a relatively new concept to our continent, and scientifically not much has been documented on the potential impact fracking may have on the environment, economy and socially, much uncertainty still surrounds the consequences.¹³² The issue to be decided can simply not be decided without the court(s) relying on expert guidance through expert opinion on affidavit or evidence.¹³³ Here, the opinion of a geohydrologist, expressing his/her expert opinion the effect of fracking on water supplies, for example, will be instructive. The contributions the *amicii curiae*, likely to be admitted to the proceedings, may also be invaluable and likely to influence the outcome of the judicial proceedings.¹³⁴ The court(s) may also include in its wide spectrum of considerations, international perspectives and experiences¹³⁵ and take cognizance of international law.¹³⁶

But, before those ideas are accepted in South Africa, what needs to be considered is whether they are compatible with the situation and conditions, here. What we do know is that serious concerns exist in other regions about the impact of fracking on the environment. And while the mysteries of fracking still loom large, what is suggested is that the court adopt a cautious

¹²⁹ *Ibid.*

¹³⁰ See Ebeku “The Right to a Satisfactory Environment and the African Commission” 2003 3 *African Human Rights LJ* 149 with reference to the influence of the African Charter when a Commission has to enquire into environmental abuses.

¹³¹ See *S v Makwanyane supra* par 25.

¹³² See De Wit 2011 107(7/8) *South African Journal of Science* 791–799.

¹³³ See *Gentiruco AG v Firestone SA (Pty) Ltd* 1985 (1) SA 720 (Z) 724I on the value of expert opinion.

¹³⁴ See Rule 16A of the Uniform Rules of Court in respect of the admission of an *amicus curiae* in proceedings before the High Court. For an instructive case on the role of the *amicus curiae* see *Hoffman v South African Airways* 2001 (1) SA 1 (CC) par 63 and other cases that followed.

¹³⁵ See *BP Southern Africa (Pty) Ltd v MEC for Agricultural, Conservation, Environment and Land Affairs supra* 157B–C with regard to the influence of s 39(1)(b) of the Constitution.

¹³⁶ See s 39(1)(b) which obliges courts to consider international law when interpreting the Bill of Rights. See also s 233 and 239(1) of the Constitution which oblige courts to interpret legislation in conformity with international law.

approach.¹³⁷ What it means is in the absence of scientific certainty, the court should rather err towards caution and not accept the fracking technique at all, especially where there is a risk of serious or irreversible damage.¹³⁸ If it is found that not enough environmental-risk assessments have been carried out, the court should call for greater investigations in the form of impact assessments before any go-ahead is given for the process to start. That accords with the European Court's decision in *Taskin v Turkey*¹³⁹ in which the court suggested that no decision should be taken unless appropriate investigations and studies had first been carried out to allow them to predict and evaluate in advance the effects of those activities which might damage the environment and infringe individuals' rights. It is a principle that should have a bearing on a court's decision whether or not to allow fracking.¹⁴⁰

8 CONCLUSION

Although job creation and the invention of domestic energy are vital to our nation's existence, fracking should not be allowed to be explored, unless, reliable scientific evidence is produced that will show proper legislatively controlled mechanisms and supervision have been put in place, free of hazards to the environment and that no threat to health or life exists. The degradation of the land, pollution of ground water and the air remain serious concerns and cannot be ignored. The need for an emergent economy and socio-economic development can never outweigh the right everyone has to "an environment not harmful to their health and or well-being".

¹³⁷ See Kantor "Fracking – A Cautious and Risk-averse Approach" December 2011 *De Rebus* 32; and see also Glazewski *Environmental Law in South Africa* 2ed (2005) 18.

¹³⁸ See s 75(2) of the National Environmental Management Biodiversity Act 10 of 2004; and see also the cautionary remarks made by Murphy J in *HTF Developers (Pty)Ltd v Minister of Environmental affairs and Tourism* 2006 (5) SA 512 (T) par 16.

¹³⁹ 2006 42 EHRR 50.

¹⁴⁰ See the Constitutional Court decision in *Fuel Retailers Association of South Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province supra* (CC) par 98; and see also *MEC, Department of Agriculture, Conservation and Environment v HTF Developers (Pty) Ltd supra* par 65.