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**A STUDY OF THE NON-TAX FISCAL REGIME FOR SHALE GAS DEVELOPMENT IN  
SOUTH AFRICA**

**By**

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## **ABSTRACT**

South Africa is pursuing the exploration and exploitation of its possible petroleum resources particularly shale gas, following the estimation of just over 400 trillion cubic feet (tcf) of shale gas resources in the Karoo region. This, including the lodgement of five shale gas exploration right applications has necessitated the strengthening of the petroleum regulatory framework as well as the fiscal regime to ensure that South Africa remains an attractive destination for investors and for South Africa to extract maximum economic benefits. This paper has undertaken an examination of the current fiscal regime particularly the non-tax elements as stipulated in the current regulatory framework. Upon its face value the South African fiscal regime appears to be underdeveloped and not necessarily designed to cater for development of shale gas. Furthermore, it is not designed to address the specifics of shale gas development within the South African context. Some aspects of the South African fiscal regime may require to be strengthened while also remaining relevant and competitive internationally. A fiscal regime that is flexible and sensitive to shale gas development specific within a country context is required. Consideration for a differentiated tax construction may also be incorporated to make up for allowances provided at the beginning of the project. This will be in line with South Africa's objectives for the creation of a sustainable and competitive petroleum industry that provides a win-win solution for both government and the industry.

## LIST OF ACRONYMS

ANC:- African National Congress

API:- American Petroleum Institute

BFR:- Big fast results

CCGE: - Close Cycle Gas Energy

CCGT: - Close Cycle Gas Turbine

CSR:- Corporate Social Responsibility

DEA:- Department of Environmental Affairs

DMR:- Department of Mineral Resources

DMRE: - Department of Mineral Resources and Energy

EN:- European Standards

ICE: - Internal Combustion Engine

IRP:- Integrated Resource Plan

ISO:- International Organization for Standardization

LNG:- Liquefied Natural Gas

MPRDA: Mineral and Petroleum Resources Development Act

NDP:- National Development Plan

NOC:- National Oil Company

OECD:- Organisation for Economic Co-operation and Development

PASA:- Petroleum Agency South Africa

PSC:- Production Sharing Contract

RDP:- Reconstruction and Development Programme

ROMPCO: - Republic of Mozambique Pipeline Investment Company Republic of Mozambique Pipeline Investment Company

RRT:- Resources Rent Tax

RSC:- Risk Service Contracts

SADEC: - Southern African Development Community

SAOGA:- South African Oil and Gas Alliance

SIMS: - State Intervention in the Mining Sector

TCF:- Trillion Cubic Feet

## LIST OF LEGISLATION

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Republic of South Africa, The Mineral and Petroleum Resources Development Act, 28 of 2002, Government Gazette No. 23922, available at: [https://www.environment.gov.za/sites/default/files/legislations/mineralandpetroleum\\_resourcesdevelopment\\_act28of2002.pdf](https://www.environment.gov.za/sites/default/files/legislations/mineralandpetroleum_resourcesdevelopment_act28of2002.pdf).

Republic of South Africa, The Mineral and Petroleum Resources Royalty Act, 28 of 2008, Government Gazette No. 31635, available at: <https://archive.opengazettes.org.za/archive/ZA/2008/government-gazette-ZA-vol-521-no-31635-dated-2008-11-24.pdf>.

## **KEYWORDS**

Shale gas, fiscal regimes, petroleum, oil and gas, tax instruments, non-tax instruments, fiscal elements, fiscal policy

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## CHAPTER 1: BACKGROUND

### 1.1. Introduction

The South African petroleum industry is regarded as nascent in nature as compared to the mining industry which has over 100 years of existence.<sup>1</sup> In the South African energy and mining space petroleum development has recently been brought into the fore through two aspects. The first being the lodgement of five exploration right applications for shale gas development in terms of the Mineral and Petroleum Resources Development Act, 28 of 2002 ('MPRDA') for shale gas exploration through hydraulic fracturing with the State Regulatory agency, the Petroleum Agency South Africa ('PASA') in 2011.<sup>2</sup> The second being the implementation of the *Operation Phakisa Oceans Economy* initiative aimed at unlocking the economic potential of South Africa's oceans.<sup>3</sup>

The lodgement of exploration right applications prompted the South African Government, through the then Minister of Mineral Resources, to commission an inter-ministerial study led by the then Chief Executive Officer (CEO) of PASA in 2012. The intention of the study was to investigate and advise the Government on the potential impact of the utilisation of hydraulic fracturing as a mechanism for reservoir stimulation during the exploration and exploitation of shale gas resources in the Karoo region.<sup>4</sup> The aim of the study was to evaluate the potential environmental risks posed by the process of hydraulic fracturing as well as the negative and positive social and economic impact of shale gas exploitation. Although the study recommends for a more in-depth and comprehensive assessment, several critical areas were identified for which specified recommendations for further attention and development were highlighted. These included amongst others the technical aspect of hydraulic fracturing, environmental and social implications, the regulatory framework and economic implications of hydraulic fracturing.

Further to this, the Government has embarked on the process of unlocking the economic potential of South Africa's oceans through a process termed *Operation Phakisa Oceans Economy*.<sup>5</sup> This process began with the piloting of the Malaysian Big Fast Results ('BFR') methodology approved by Cabinet in March 2014 and is being led by the then Department of Environmental Affairs (DEA). Through this process the 'Lab' or planning phase of the *Oceans Economy Operation Phakisa* took place in Durban during July and August 2014 and resulted in the production of detailed 'three feet' delivery plans, which are implementation plans. One of the aspects on unlocking the oceans economy which is led by the then Department of Mineral Resources (DMR) has been determined to be Offshore Oil and Gas Exploration. The main aspiration of this aspect is to enable the exploration activities to take place

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<sup>1</sup> J.P. Casey, *History of Mining in South Africa*, available at: <https://www.mining-technology.com/features/history-of-mining-in-south-africa/> (last accessed 4 November 2019).

<sup>2</sup> Petroleum Agency South Africa, *Shale gas Explore South Africa*, available at: <http://www.petroleumagencysa.com/index.php/15-projects/93-shale>, last accessed on 4 November 2019.

<sup>3</sup> *Operation Phakisa Oceans Economy, 2013*, available at: <https://www.operationphakisa.gov.za/Pages/Home.aspx>, (last seen on 16 June 2019)

<sup>4</sup> Working Group under the coordination of the Petroleum Agency SA, *Investigating Hydraulic Fracturing in the Karoo Basin in South Africa (2012)*, available at: <https://www.dmr.gov.za/Portals/0/adam/Content/mR6c2sNChk-u72XE1zK0XQ/Text/Executive%20Summary%20Shale%20Gas%20Report%20-%2018%20Sept%202012.pdf>, (last accessed on 16 June 2019).

<sup>5</sup> See *Operation Phakisa Oceans Economy (2013) supra* n. 3.

through the drilling of exploration wells by the industry in search for oil and gas resources. A critical element for this to take place and which was determined to be part of the constraints is that of an enabling regulatory environment. To this it was determined that certainty is a prerequisite in order to enable the necessary investments for exploration activities to commence.

In order to achieve the necessary regulatory certainty a work stream on the review of the mining regulatory framework which regulates the exploration and exploitation of oil and gas exploration and production was established. This work stream is meant to track the review of the Mineral and Petroleum Resources Development Act, 2002 ('MPRDA') as amended by the Mineral and Petroleum Resources Development Amendment Act 49 of 2008. A resolution has been adopted and announced by the Minister of the now Department of Mineral Resources and Energy ('DMRE') for the separation of the petroleum provisions into an independent legislation from the MPRDA.<sup>6</sup>

## **1.2. Aims and Objectives**

South Africa is pursuing the exploration and exploitation of its possible petroleum resources, particularly shale gas resources, following the estimation of just over 485 tcf shale resources in the Karoo region by the United State Energy Information Administration.<sup>7</sup> This has necessitated the strengthening of the petroleum regulatory framework including the fiscal regime to ensure that while it remains attractive to investors South Africa does not lose out on the possible economic benefits of the exploitation of shale gas resources. The aim of this paper is to make a determination on suitable non-tax elements of regulatory regime that can be implemented for the development of shale gas resources in South Africa. Further to this, an indication of jurisdictions which are utilising some of these elements in their petroleum industries will be made for an understanding on how these elements are being implemented.

The first objective of the study is to provide an assessment of existing tax and non-tax principles and elements of a fiscal regime that are applicable for shale gas development in the industry. Secondly, to highlight the current South African policies and regulatory regimes in respect of applicable fiscal systems. Thirdly, to advance proposals and input on suitable non-tax elements of the fiscal regime for shale gas development taking into consideration the particularities of shale gas development under the South African context. This will also consider how these fiscal elements are being applied in other jurisdictions.

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<sup>6</sup> Minister Mantashe Briefs Investors in Oil and Gas on Government Plans for the Industry, <https://www.dmr.gov.za/news-room/post/1749/minister-mantashe-briefs-investors-in-oil-and-gas-on-government-plans-for-the-industry>, (last accessed 17 November 2019).

<sup>7</sup> See *Investigating Hydraulic Fracturing in the Karoo Basin in South Africa* (2012), *supra* n. 4.

### **1.3. Research Questions**

#### *1.3.1. Primary Research Question*

What elements of the non-tax fiscal regime system that can be considered by South Africa for the development of shale gas resources?

#### *1.3.2. Secondary Research Questions*

- What are the non-tax principles and elements of a fiscal regime that are applicable for shale gas development?
- What is the nature/ status of the policy position and fiscal elements that are currently applicable in South Africa for petroleum development?
- What inputs and contributions towards a non-tax fiscal regime regulatory framework that can be considered by South Africa?

### **1.4. Methodology/ Approach**

The research paper is a desktop-based study indicating the background of shale gas development and the applicable fiscal regime for oil and gas in South Africa. Since there has not been much development within the legal prescript and case law in respect of these elements' books, articles, journals and the regulatory framework have been utilised.

This paper has not focus on the tax and royalty elements of the regime particularly in respect of proposals made as this is a competence of the National Treasury and beyond the scope of the research. The focus will be mainly on non-tax elements including state participation highlighting how this aspect requires strengthening to be relevant and competitive with other jurisdictions.

### **1.5. Relevance of the Study**

The research study is relevant in view that there is lack of available research and information on shale gas development in South Africa. It serves as a source material for future research on the development of these resources and development of a fiscal regime on this area in respect of non-tax elements. Furthermore, the South African regulatory framework is undergoing a review process in line with policy decisions that have been taken on the provision of regulatory certainty. This study could also assist policy developers as they consider a suitable fiscal regime for the development of upstream petroleum resources in South Africa.

### **1.6. Chapter Outline**

The first chapter has focused on the introduction of shale gas development in the South African context and provide a brief discussion on the historical developments for the exploration of shale gas resources. It further provides the aims and objectives of this paper regarding the discussion on shale gas fiscal regimes.

The second chapter has mainly focused on providing a literature review and outline of the fiscal principles and elements of a petroleum regulatory regime particularly relating to good fiscal regime. The third chapter has outlined the South African policy position as contained in national policy

documents and pronouncements. This chapter also provide an analysis of the existing South African fiscal regimes in respect of tax and non-tax elements.

The fourth chapter provides a discussion on the principles and factors that should define the fiscal regime for shale gas development. This chapter further makes proposals on non-tax fiscal elements that could be considered by the South African Government in the development of its shale gas resources. The chapter will also assist to illustrate the implementation of the non-tax fiscal elements in other petroleum jurisdictions. The fifth chapter provides a conclusion highlighting what should be taken into consideration in the development of a fiscal regime for shale gas.

## CHAPTER 2: POLICY, TAX AND NON-TAX INSTRUMENTS

### 2.1. Introduction

There are various fiscal elements that could be considered for the development of a petroleum resources fiscal regime. These include both tax and non-tax elements that can be applicable depending on the policy intention and direction adopted by a country. In considering suitable elements it's important to establish the nature of the resources in question, whether its oil or gas, conventional or unconventional and onshore or offshore due to marked differences between the exploration and exploitation methodology which inspire for differentiated treatment. This together with other country specific development factors influences the determination of the economic viability of the project and ultimate investment decision by investors for prospective exploration and exploitation. Accordingly, this chapter outlines policies, tax and non-tax elements that exist within the petroleum sector which could be considered.

### 2.2. Elements of a fiscal Regime for Upstream Petroleum Exploration and Exploitation

The determination of the economic share between the state and investor is influenced by the country's historical development of the hydrocarbons sector and the availability of resources. In jurisdictions where there are proven resources in abundance, available geological data and historical evidence of successful development of the oil and gas resources, the risk of finding commercial resources is reduced. In such jurisdictions the imposition of fiscal regime that promotes high government take can be imposed as its recognised that they have high proven resources with less probability of dry hole discoveries.<sup>8</sup> While this paper is mainly focused on non-tax elements, it is important to also consider the tax elements as they are both applicable and critical in the determination of a suitable fiscal regime for petroleum development.

Amorin, indicates that *'gas projects have different business structures that leads to less margin of rent to be captured and a particular flow of revenues that should be taken into consideration when designing a fiscal system oriented to promote investments.'*<sup>9</sup>

#### 2.2.1. Tax instruments

The capture of rents from petroleum resources can be through various instruments. These include royalties which are a traditional method used by government to gain revenue from the exploitation of natural resources. They are usually based on the volume or the value of production or export of resources. These instruments are attractive to government as they provide upfront revenue streams from projects. They are also predominantly easy to calculate, collect and monitor. However, they are regarded as a regressive form of taxation as high royalties tend to distort investment decisions and encourage uneconomic choices. This, can somewhat be mitigated by applying sliding scale royalties

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<sup>8</sup> A.S. Rao, "Fiscal Regime Design Elements and Relative Regime Ranking for Concessions", *OPEC Energy Review (2017)*, at 45-46.

<sup>9</sup> L. Amorim, "Design of Fiscal System for Exploration of Shale Gas: How is it Different from Conventional Oil and Gas?", *Society of Petroleum Engineers (2014)*, at 1.

based on production levels or sales.<sup>10</sup> A sliding scale royalties is a royalty rate imposed on production and is subject to escalation on the basis of a chosen threshold.<sup>11</sup>

Corporate income taxes may also be applicable which can be higher in order to capture more rents. The taxes are usually due when annual revenue exceeds some measure of costs and allowances as per the definition of the taxable income and relevant applicable rate. As a fixed tax rate in their traditional formulation corporate taxes are regressive as they remain the same at different levels of profitability. However, more jurisdictions have adopted a progressive income tax rate to share in the upside of the profitability of the project by adopting a stepped tax rate linked to resources price or production volume or sales value.<sup>12</sup>

Import and export duties apply to all equipment imported in a country although they seem to have been substituted mostly by local content requirements aimed at the protection of domestic industries. Exemptions to the petroleum industry is usually provided by majority of countries from import duties at various levels. Export duties are usually not levied as they distort the price of export and domestic supplies.<sup>13</sup>

Ring fencing is an industry specific feature within the tax system. It refers to a delineation of taxable entities which can be a contract area or individual project. This applies in that income derived from that contact area or project cannot be offset against another area or another project or through the separation of upstream from downstream operations.<sup>14</sup>

Resource rent tax (RRT) is tied directly to the project's profitability. For this, taxes are deferred until all expenditures have been recovered and the project has yielded a predefined target returns and a very high marginal tax is applied to operating revenue. The advantage of this tax lies in that it only provides income to government when the targeted returns have been reached. However, it is more difficult to monitor and the administrative costs to maintain depend largely on the host government's capacity.<sup>15</sup> The RRT is aimed at capturing increasing share of revenues as profitability rises and dramatic swings in commodity prices have made RRT a means of collecting what is commonly known as windfall profit tax. Its argued that RRT is a means of capturing a larger share of rents without overtaxing the industry during periods of lower profitability.<sup>16</sup> Land, has defined RRT as the ex-post surplus of the total project lifetime value arising from the exploitation of a deposit, in present value terms, over the sum of all costs of exploitation, including compensation to all factors.<sup>17</sup>

Surface taxes are paid annually based on the size of the area subject to a lease. Different amounts normally apply during exploration and production and the amounts are set at a nominal amount. The intention is to discourage investors from hoarding to unexplored acreage. Surface fees have the

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<sup>10</sup> S.Tordo, "Fiscal Systems for Hydrocarbons Design Issues", *World Bank Working Paper No.123 (2007)*, at 37.

<sup>11</sup> B. Land, "Capturing a Fair Share of Fiscal Benefits in the Extractive Industry", *Transnational Corporations* 18:1 (April 2009), at 164

<sup>12</sup> See Tordo (2007) *supra* n. 10, at 39.

<sup>13</sup> *Idem*, at 41.

<sup>14</sup> *Idem*, at 38.

<sup>15</sup> *Idem*, at 40.

<sup>16</sup> P.D. Cameron and M.C. Stanley, Fiscal Design and Administration, in *Oil and Gas and Mining A Sourcebook for Understanding the Extractive Industries*, (World Bank Group, 2017), at 159.

<sup>17</sup> B C Land, "Resource Rent Taxes: A Re-appraisal", in P Daniel, M Keen and C McPherson (eds), *The Taxation of Petroleum and Mineral: Principles, Problems and Practice*, Routledge (2010), at 244.

advantage of providing revenue and are easy to calculate, collect and monitor usually by the State upstream agency responsible which uses this amount to cover administration costs.<sup>18</sup>

### 2.2.2. *Non-tax Instruments*

There is also a variety of non-tax instruments that are in existence within the petroleum industry. One of these non-tax instruments is Government participation by the host Government or through the national oil company. This is usually arranged through production sharing agreements and may be acquired via various forms. One form is through working interest on the same terms as all other joint venture partners, namely a percentage of shares in the project.<sup>19</sup> This implies that the state will bear the costs of exploration, development and operation and will in return be entitled to a share of the production of the oil or gas asset. This form is however rare to occur at the commencement of the project. Usually the state will reserve the right to opt back into the project at a later stage normally during development or production stage. The state normally exercises this through carried interest where the contractor bears the costs and risk of exploration and upon a discovery being made to which the state will opt back in for a set percentage.

If the right is acquired through concession or favourable terms where the state may or may not reimburse exploration costs, the state normally pays for its share out of future earnings of the project. The advantage of state participation may be motivated by amongst others the desire to increase the sense of ownership, to facilitate the transfer of technology or to increase control over field development. However, state participation also comes with costs and risks associated with equity participation, there may also be a potential conflict of interest due to its role as a regulator and equity holder. Participation also represents a cost to investors as the higher the percentage participation the lower the other fiscal terms will be. For investor, state participation on concessional terms reduces cash flow and increases risk profile of investment.<sup>20</sup> It is noted that state participation may be motivated by non-fiscal objectives such as knowledge transfer and it may be favoured by investors as it may help develop a closer, long term cooperation with the host country.<sup>21</sup>

Bonuses are usually paid by investors upon signature of an exploration right and production agreement. In other instances, they are paid upon discovery, declaration of commerciality, commissioning of facilities, commencement of production and upon reaching target production levels. They are easy to administer as they are fixed and usually a one-time occurrence and serve as an early source of revenue for the government.<sup>22</sup> Bonuses have an impact on project risk as they increase exploration and development economic thresholds. To mitigate this, high bonuses are balanced by lower royalties, taxes, production sharing and government stakes. The maximum level of bonuses is dependent on factors such as overall fiscal terms, characteristics of the resources/ reserve, a country's political risk and the risk profile of the targeted investors.

Tordo has noted that high signature bonuses may discourage investors especially where the political risk is perceived to be high or when there is high level of geological uncertainty.<sup>23</sup> Its further indicated that bonuses boost government take where there is a concern of collecting less money than

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<sup>18</sup> See Tordo (2007) *supra* n. 10, at 42.

<sup>19</sup> D. Karasalihovic-Sedlar, G.Barbir, V. Brkic, "Types of Fiscal Regime in Hydrocarbon Exploration and Production", *The Mining Geology-Petroleum Engineering Bulletin* (2017), at 49.

<sup>20</sup> See Tordo (2007) *supra* n. 10, at 43.

<sup>21</sup> See Cameron (2017) *supra* n. 16, at 160-161.

<sup>22</sup> See Karasalihovic-Sedlar (2017) *supra* n. 19, at 49

<sup>23</sup> See Tordo (2007) *supra* n. 10, at 42.



the investor is willing to pay. They should not however be seen as an add-on to a comprehensive fiscal regime and it usual for investor to seek some offset to the bonus through other fiscal elements. They are regarded as a sunk cost for companies, recoverable as an allowable corporate income tax deduction in the event of a successful development project only.<sup>24</sup>

Cost recovery limit refers to provisions in production sharing agreement and at times in concessionary contracts which limits the percentage of resource that can be used for this element. This is determined after the deduction of royalties from the remaining revenues. Where the costs exceed the cost recovery limit, the costs are carried forward for recovery in subsequent periods which enables the state to receive a share of production during each accounting period. Although cost recovery limit is less regressive than royalties, they are however difficult to monitor.<sup>25</sup> Nakhle state that cost recovery includes mainly unrecovered costs carried over from previous years, operating expenditures, capital expenditures, abandonment costs and some investment incentives and exclude financing costs and interests expense.<sup>26</sup> Karasalihovic-Sedlar indicates that a lower percentage of limitations is very restrictive for investors especially for marginal field development.<sup>27</sup>

Profit oil splits refers to the remaining revenue following the deduction of royalties and cost recovery in a production sharing agreement. The profit oil/gas is usually split between the parties on a sliding scale defined on the basis of agreed parameters which may include average daily production, cumulative volume of production, oil/ gas price, value of production, R-factor and rate of return (RoR). The sliding scale profit oil/gas splits allows for government to provide a suitable fiscal package for a project without changing the overall fiscal framework. It has been noted that there is a preference for a sliding scale based on production rate which is easier to calculate compared to R-factor and RoR. However, this does not take into consideration changes in the price of oil or gas.<sup>28</sup> It has been observed that many production sharing agreements have excluded royalties due to that its already built in from the first year of production where the state receives annually a certain government share in profit petroleum spilt.<sup>29</sup>

Liabilities to the Local Community refers to quota of local employment, their training costs and purchase of domestic goods and services. This is usually implemented for local socio-economic development and the costs are usually recoverable and tax exempt. It also assists with technology and know-how transfer to increase employment and strengthen the domestic industry. It can be a disadvantage in instances of overloading investors with high expenditures.<sup>30</sup>

### **2.3. Principles of a Fiscal Framework**

Following the above indication of various fiscal elements that can be taken into consideration in the development of a petroleum sector fiscal regime, it's important to define the differences between oil projects and gas projects and conventional and unconventional. This is due to that there are

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<sup>24</sup> See Cameron (2017) *supra* n. 16, at 157-158.

<sup>25</sup> See Tordo (2007) *supra* n. 10, at 44.

<sup>26</sup> C Nakhle, "Petroleum Fiscal Regimes", in P Daniel, M Keen and C McPherson (eds), *The Taxation of Petroleum and Mineral: Principles, Problems and Practice*, Routledge (2010), at 99.

<sup>27</sup> See Karasalihovic-Sedlar (2017) *supra* n. 19, at 50.

<sup>28</sup> See Tordo (2007) *supra* n. 10, at 44.

<sup>29</sup> See Cameron (2017) *supra* n. 16, at 163.

<sup>30</sup> See Karasalihovic-Sedlar (2017) *supra* n. 19, at 50.

particularities that make their economic appraisal remarkably different. Amorin concisely summarises that gas projects have different business structures that leads to less margin of rent to be captured and a particular flow of revenues that should be taken into consideration when designing a fiscal system oriented to promote investments.<sup>31</sup>

Amorin, further outlines a several distinctive factors between oil and gas resources that are critical toward designing a fiscal system. Firstly, that there is high cost associated with the transportation of gas resources. The gas value from source to consumer has a substantially higher cost per unit of energy and is much less flexible in terms of transportation and trade, as it can only be transported via pipeline or in the form of LNG. Secondly, as a result of transportation limits, the gas market is essentially regional rather than a global market. This present another unique feature in that there is no uniform price for gas trading which exists for oil. A third feature is that gas projects need to occur in large- scale operation in order to justify production and delivery and this requires high fixed costs to spread over a larger basis. An operation less than full capacity means that higher fixed cost which spread over smaller through put resulting in exponential decline of profits. Thus, to increase profitability gas projects are traded through long term contracts as the high initial costs also require to lock-in future revenue streams. Lastly, gas when compared to oil produces smaller heat content which places further emphasis on increased costs due to transportation inflexibility.<sup>32</sup>

In respect of conventional and unconventional differences Amorin notes a few differences based on the geological and technical exploration framework. Unconventional resources are spread over a larger area than conventional gas resources. Thus, there is a demand for the use of particular technology and methodology for enhanced recovery in commercial quantities, which is sustained horizontal drilling and hydraulic fracturing. The demand for permanent drilling to keep production at commercial levels requires a sustained capital intensity. A further contributing factor is depth which presents widely divergent cost estimates for shale gas and is compounded by the geological differences between plays and between wells within the same plays. This means that an economic assessment of one project cannot be assimilated into another as they will most likely present divergent costs levels and projections. The depths of shale plays can vary from near surface to several thousand meters below the surface and the thickness can vary from a few meters to several hundred. What is of significant importance is that the deeper the well the higher the costs.<sup>33</sup>

Nulle, has also noted the complexities of unconventional resources which are found deeper than conventional and are complicated further by that both conventional and unconventional may be found in the same area. Further to this, shale formations extend across large piece of geographical area and possess a great deal of heterogeneity in composition. Thus, this emphasises the need to utilise geological information, advanced technology and extensive testing to find the location of the 'sweet spot'.<sup>34</sup>

The degree of maturation of the gas is also important as it has an impact on the economics of the project. This is classified as dry or wet gas reserves which also varies between shale formations and wet gas is considered more valuable in the market. The development of shale gas is characterised by

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<sup>31</sup> See Amorin (2014) *supra* n. 9, at 1.

<sup>32</sup> *Idem* at 2-3

<sup>33</sup> *Idem* at 5

<sup>34</sup> G.M. Nulle, "Prospects of Shale Gas Development Outside the USA: Evaluating Nation's Regulatory and Fiscal Regimes for Unconventional hydrocarbon", *Journal of World Energy Law Business*, Vol 8 (2015), at 236.

lack of precision as the geological conditions can vary vastly from the shale plays and it is thus difficult to conduct an accurate assessment of the expected outcome of a project. It is also indicated that other services relating to shale gas development outside of the United States of America are not easily available and need to be mobilised and decommissioned thus contributing substantially to increased drilling costs.<sup>35</sup>

The design of a fiscal regime for shale gas should thus take into consideration the abovementioned differences and particularities presented by the conventional oil and gas ventures. Furthermore, policy developers should be aware of the following issues, namely the dynamics of the segment subject to taxation to effectively function as a revenue raising instrument and rule the behaviour of taxpayers. What is also of important is that gas projects have less rent available for taxation and within the world average government take for gas is most likely 10% less than oil. Policy developers are also advised and cautioned when modelling a system to pay attention to fundamental parameters for targeting the margin of rent available for taxation, namely the cost: price ratio.<sup>36</sup>

Further, when gas is compared to oil resources, it is important to take into consideration the indispensable relation of gas development with downstream facilities. Gas resources are mostly traded under long term contracts that will provide predictable and certain revenue streams for repayment of the required infrastructure which increases bankability of the project. In designing a fiscal system that seeks to attract investment the government should seek a trade-off between regressive features such as royalties, cost recovery limit, exploration tax and progressive features such as the ROR, R-factor based taxes or production sharing. The challenge however rests in how to address the enormous variances that can be found between shale plays or between shale well performance where each shale formation has different geological characteristic that affect gas production, the technologies needed and the economics of production.<sup>37</sup>

It is advised that a more favourable fiscal system should be considered for shale gas development due to the existence of strong uncertainties on important variables as indicated above. Furthermore, projects need sufficient profits to cater for failures and investor will seek for a greater risk premium. The fiscal system should be sensitive to fluctuations in production level during the life of the project which is supported by a constant push for technological advancements. It is suggested that a sliding scale mechanism targeted at production level is utilised in order to ease the distorting effect of regressive features levied on a flat scale rate. It is further suggested that levies for land use should also be low as shale gas deposits are spread over a larger area than conventional reservoirs as a greater area is needed for non-conventionals and this can allocate a distortive burden of land fees which have an impact on the economics of the project.<sup>38</sup>

To offset or minimise the regressive nature of the fiscal system it is recommended by Amorin that the adoption of tax instruments linked to profitability of the project namely the rate of return or the R-factor which it targeted at the financial reality of the project. In respect of the essential linkage between gas projects and downstream facilities it is recommended that incentives such as capital

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<sup>35</sup> See Amorin (2014) *supra* n. 9, at 5.

<sup>36</sup> *Idem* at 6.

<sup>37</sup> *Ibid.*

<sup>38</sup> *Idem* at 7.

investment appreciation, accelerated depreciation schedules for cost incurred for transportation infrastructure allowance for recovery of pipeline costs are put in place.<sup>39</sup>

It has been noted that government usually has a tendency of tightening up fiscal systems immediately after investments have been secured thereby closing up opportunities for investors to renege from their investment decisions. This unexpected change in fiscal regime could have a distortive effect on the profitability of the project and thus investors may seek a certain level of stability on the fiscal terms. This can however be counter balanced by a tax allocation that is sensitive to the profitability of the project.<sup>40</sup>

#### **2.4. Conclusion**

In order to develop a fiscal regime for shale gas it is imperative to first understand the current status of the petroleum development within South Africa, particularly on issues such as the historical development of the oil and gas sector, the resources available, the socio-economic dynamics and political system dynamics. Further issues such as the risk profile as determined by available geological data and historical evidence of successful development of the oil and gas resources. There is a number of the non-tax fiscal elements that can be activated for shale gas development in South Africa. These include the various bonuses and government participations. However, in considering these together with the tax elements government policy needs to consider the specific requirements of shale gas development. This refers particularly to the geological and technological issues which are associated with the exploration and exploitation of shale gas resources as compared to conventional resources, which thus requires a shale gas specific fiscal system to be developed. Further to this an understanding of the shale gas development within the South African context needs to be considered, particular issues relating to downstream aspects which have an impact on the economic viability of the development of these resources. This will have a determining effect on the economic viability of shale gas development in South Africa and thus also serve to attract necessary investment.

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<sup>39</sup> *Ibid.*

<sup>40</sup> *Idem* at 8.

## CHAPTER 3: THE SOUTH AFRICAN POLICY AND LEGISLATIVE REGIME

### 3.1. Introduction

The South African policy position on fiscal regimes for shale gas development, although not clearly specified can be discerned from a number of documents which include national policy to legislative provisions in national legislation. The fiscal regime position is not clearly indicated for shale gas specifically but has been immersed into the general oil and gas formulation. The South African policy landscape has thus far not taken into consideration the differences in geology and technical extraction methodology of these resources and specifics of different gas resources. There are current developments in this area prompted by the current review of the regulatory framework for mining in South Africa. The review relates to the mining regulatory framework being separated to develop a specific legislation aimed at regulating upstream petroleum resources exploration and exploitation. This legislation should consider the different characteristics of the development of gas from oil resources, conventional and unconventional resources and on-shore and off-shore development.

### 3.2. South African Policy Considerations

The White paper: A Mineral and Mining Policy for South Africa of 1998 is silent on the issues of petroleum and seem to be more focused on mining aspect. It has however indicated that as government policy, government will seek to create a macro and regulatory environment conducive to economic growth and development, in which the mining industry can make effective use of its human and capital resources. It has further committed Government to the efficient provision and functioning of the physical, social and institutional infrastructure necessary for the competitiveness of the mining industry within the constraints of its available resources.<sup>41</sup> The government has committed to ensuring that the tax regime will be consistent and stable and that the aggregate rate of tax will be internationally competitive in developing mining tax policy.<sup>42</sup>

The National Development Plan (NDP) which is seen as the blueprint plan for South Africa economic development post the introduction of the Reconstruction and Development Programme (RDP) strategy in November 2011. The NDP is mostly focused on addressing issues of poverty and inequality characterised by targeting specific socio-economic goals to be achieved by 2030. The objectives of the NDP include the creation of jobs and livelihoods, expansion of infrastructure and transitioning to a low-carbon economy, just to name a few.<sup>43</sup> Significant pronouncements regarding shale gas development have been included into this developmental plan. Shale gas has been identified as a key contributor for the substitution of coal resources in energy generation in order to reduce South Africa's carbon footprint. It has been indicated that South Africa will seek to develop the shale gas resources in the Karoo provided the environmental cost and benefits outweigh the costs and benefits of coal dependence or the alternative which is nuclear. The potential for shale gas resources has been highlighted through an example that the exploration of 24 Tcf of shale gas resources can power up about 20 gigawatts (GW) of combined cycle gas turbines to generate about 130 000 GW hours of electricity per year which amounts to a substantial amount of energy required in South Africa.

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<sup>41</sup> Department of Mineral Resources, *White Paper A Mineral and Mining Policy for South Africa* (October 1998), at 8.

<sup>42</sup> See White Paper A Mineral and Mining Policy for South Africa (1998) *supra* n.41, at 12.

<sup>43</sup> National Planning Commission, *The National Development Plan* (November 2011), at 5

<sup>44</sup> As part of the actions by the NDP, it is proposed that exploration drilling is enabled to identify economically recoverable coal seams and shale gas reserves while environmental investigations continue to ascertain the possibility of the sustainable exploitation of these resources. In the event that gas reserves are proven while the environmental concerns are alleviated, it is proposed that the development of these resources and gas to power projects are fast tracked.<sup>45</sup>

In his address during the State of the Nation Address, the State President Hon, Cyril Ramaphosa highlighted the intention of pursuing the objectives of the NDP to which all resources and energy will be dedicated. Further the intention to increase the contribution of renewable and clean energy into the South Africa's energy mix and explore the potential of the hydrogen economy.<sup>46</sup> This has been further elaborated on by the Minister Gwede Mantashe of the DMRE during his State of the Nation Address debate where he highlighted work that is going into South Africa energy mix options and further highlighting the need to ensure security of energy supply along with obligations to address climate change.<sup>47</sup> During the Budget Vote Speech, Minister Mantashe highlighted the need to create a stable, predictable policy and regulatory framework that will lead to investment and growth in the sector since energy resources are critical for economic growth. He further announced that work is underway in developing a Petroleum Resources Development Bill which will ensure policy certainty for the upstream petroleum sector, has great potential to grow GDP, contribute to the fiscus and create much-needed jobs. Minister Mantashe also indicated that the current supply of natural gas in South Africa is mainly from imports via the Republic of Mozambique Pipeline Investment Company' (ROMPCO) pipeline. There is a need to explore more economical options to bring natural gas into the South African market, including accelerating South Africa's own natural gas exploration activities such as the Karoo Shale Gas and the deep-sea discoveries.<sup>48</sup>

The Integrated Resources Plan (IRP) concluded in October 2019 has made significance pronouncements on the use of Close Cycle Gas Turbine (CCGT), Close Cycle Gas Energy (CCGE), or Internal Combustion Engine (ICE) gas to power technologies to complement renewable energy while short term measures are for gas imports into South Africa. It's also indicated that local and regional resources will assist to scale up within manageable risks.<sup>49</sup> It's anticipated that this will be done through a Southern African Development Community (SADC) Gas Master Plan which is being developed to identify the short- and long-term infrastructure requirements to enable the uptake of a natural gas market. The plan has pronounced on a requirement of 1000 MW of power by 2023 and

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<sup>44</sup> *Idem* at 143

<sup>45</sup> *idem* at 31

<sup>46</sup> President Cyril Ramaphosa, *State of the Nation Address, 2019*, available at: <https://www.gov.za/speeches/2SONA2019>, (last accessed 21 October 2019).

<sup>47</sup> Minister Gwede Mantashe, *Speech by Mr Gwede Mantashe on the Occasion of the SONA Debate Speech, June 2019*, available at: <https://www.dmr.gov.za/news-room/post/1802/speech-by-mr-gwede-mantashe-on-the-occasion-of-the-sona-debate-speech>, (last accessed 21 October 2019).

<sup>48</sup> Minister Gwede Mantashe, *Speech by the Minister of Mineral Resource and Energy, Honourable Samson Gwede Mantashe, on the Occasion of the Budget Vote 26 in the Old Assembly Chamber, Parliament of the Republic of South Africa, 11th July 2019*, available at: <https://www.dmr.gov.za/news-room/post/1807/speech-by-the-minister-of-mineral-resources-and-energy-honourable-samson-gwede-mantashe-on-the-occasion-of-the-budget-vote-26-in-the-old-assembly-chamber-parliament-of-the-republic-of-south-africa-11th-july-2019-14h00>, (Last accessed 21 October 2019).

<sup>49</sup> Republic of South Africa, *Integrated Resources Plan*, October 2019, available at <https://www.dmr.gov.za/Portals/0/Resources/INTEGRATED%20RESOURCE%20PLAN%202019/DoE%20IRP%202019%20October%202019.pdf?ver=2019>, (last accessed 21 October 2019), at 13.

2000 MW by 2027 which has been indicated to be a low gas utilization due to certain localization constraints such as ports, environment and transmission. Thus, it does not justify the development of new gas infrastructure and power plant and consideration for conversion of diesel-powered peakers is recommended.<sup>50</sup>

### 3.3. South African Existing Regulatory Framework

#### 3.3.1 Tax Elements

Although, the tax system does not form part of the issues considered by this paper, it is crucial to mention it, as it forms a core part of the complete South African petroleum fiscal system that must be viewed in its entirety. The South African tax fiscal regime for petroleum resources can be found in the Income Tax Act of 1962 as amended.<sup>51</sup> This Act has made provision for the *Tenth Schedule* and provision for the conclusion of fiscal stability agreements in respect of petroleum rights in terms of section 26B. In terms of this, the tax rate is set at 28% of taxable income. The schedule further makes provision for dividend withholding tax which is set as 0%. The Davis Tax Commission established to review the mining tax regime has highlighted this as a means to address the critical requirement of investors in large-scale capital-intensive projects to recover their capital before the payment of taxes. Its further described this as a deviation from the usual dividend tax rate of 15% which is subject to double taxation agreements that usually allow for 5%-10%.<sup>52</sup>

The Davis Tax Commission noted the African National Congress's (ANC) State Intervention in the Mining Sector (SIMS) report which made several proposals regarding fiscal regimes in the development and enhancement of natural resources to grow and develop the economy. Although the report was not adopted as government policy, but some crucial fiscal instruments were highlighted. This includes the call for a fair share of the resource rents for the State which was believed to be a call for the imposition of the windfall tax during high commodity prices. The Davis Tax Commission highlighted the point that the SIMS report does prescribe for the implementation method of the windfall tax but indicates that Government will be required to strike a careful balance to ensure that the tax imposed does not transgress tax neutrality and discourage investment.<sup>53</sup> This is a crucial objective for the establishment of a petroleum sector which should be competitive and fair.

The *Tenth Schedule* also makes provision for the deduction of all capital expenditure and loss incurred from oil and gas exploration and production during the year of assessment for purposes of determining taxable income. Furthermore, uplifts in respect of petroleum resources have been provided in the form of additional deductions of 100% capital expenditure for an exploration right for oil and gas in the year of assessment and 50% capital expenditure for production right for oil and gas in the year of assessment.

The Davis committee has summed up the uplifts as 200% "super deductions" on capital expenditure in respect of exploration and 150% "super deductions" on capital expenditure for

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<sup>50</sup> *Idem* at 47.

<sup>51</sup> Republic of South African, Income Tax Act, 58 of 1962 as amended, Government Gazette No. 38508, available at: [https://www.gov.za/sites/default/files/gcis\\_document/201505/act-58-1962s.pdf](https://www.gov.za/sites/default/files/gcis_document/201505/act-58-1962s.pdf).

<sup>52</sup> The Davis Tax Committee: *Report on Oil and Gas*, September 2016, at 46.

<sup>53</sup> *idem* at 38.

production.<sup>54</sup> The *Tenth Schedule* also confers to the Minister of Finance after consultation with the Minister of Minerals and Energy the power to enter into a binding agreement as from the date of the agreement which guarantees the provisions of the scheduled as long as the right is held by the that right holder, namely a fiscal stability clause.

The South African fiscal regime for petroleum resources is also comprised of the royalty's system. This is prescribed in terms of the Mineral and Petroleum Resources Royalty Act of 2008 (the Royalty Act).<sup>55</sup> The Royalty Act requires the payment of royalties in respect of the transfer of resources and has made a distinction between refined and unrefined resources in respect of which oil and gas is classified as refined. The formula provided for the refined resources is indicated as:  $0.5 + \frac{\text{earnings before interest and taxes}}{\text{gross sales in respect of refined minerals} \times 12.5} \times 100$ .<sup>56</sup> The rate has been capped at 5%.

The Davis Committee remarked that the royalty was carefully designed to achieve a balancing act by capturing rents during high profits and ensuring a measure of cover for the fiscus through minimum revenue streams during weak economic cycles.<sup>57</sup> It has been highlighted in Steenkamp that in terms of section 11(a) of the Income Tax Act, royalties paid by oil and gas companies in terms of the Royalty Act are deductible for income tax purposes under the general deductions formula.<sup>58</sup> This is also a critical element which adds to the attractiveness of the South African fiscal system when it comes to uplifts afforded to investors in the petroleum sector.

### 3.3.2 Non-Tax Elements

The South African regulatory framework for petroleum resources exploration and production is contained in a single Act with mineral resources, namely the Mineral and Petroleum Resources Development Act, 2008 (the MPRDA).<sup>59</sup> Although the provisions for oil and gas licensing and administration are contained in a separate chapter, chapter 6 of the MPRDA, there are processes that apply to both minerals and oil and gas licensing congruently. This, however, excludes issues relating to non-tax fiscal elements and the application of the Broad-Based Socio-Economic Empowerment Charter for the South African Mining Industry which deal mainly with the transformation agenda in the extractive industry.

The current non-tax fiscal elements of South Africa's petroleum resources have been prescribed by Ministerial declaration of 2009 in terms of the MPRDA. This has made provision for the allocation of 10% interest in upstream petroleum production rights for Black Economic Empowerment (BEE) on

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<sup>54</sup> *Idem* at 47.

<sup>55</sup> Republic of South Africa, *The Mineral and Petroleum Resources Royalty Act, 28 of 2008*, Government Gazette No. 31635, available at: <https://archive.opengazettes.org.za/archive/ZA/2008/government-gazette-ZA-vol-521-no-31635-dated-2008-11-24.pdf>.

<sup>56</sup> *Idem* at 4.

<sup>57</sup> See *Report on Oil and Gas*, *supra* n. 52, at 52

<sup>58</sup> L. Steenkamp and J. Glazewski, "Revenue and Tax Policy Considerations", in Jan Glazewski, Surina Esterhuysen (eds), *Hydraulic Fracturing in the Karoo Critical Legal and Environmental Perspectives, Juta (2016)*, at 185.

<sup>59</sup> Republic of South Africa, *The Mineral and Petroleum Resources Development Act, 28 of 2002*, Gazette No. 23922.



(commercial terms). The declaration further makes provision for the warehousing of this interest with the States' national petroleum company, PetroSA in the event that applicants are not able to secure a BEE partner. A further 10% interest is made available for PetroSA to elect to exercise as State participation in the petroleum production rights.<sup>60</sup> It is further required from right holders an annual contribution to the Upstream Training Trust of R1/ hectare with a minimum of R1000, and from offshore right holders US\$ 100 000 for the initial period and each subsequent renewals.<sup>61</sup>

On the 13<sup>th</sup> of May 2013 the South African Parliament published The Mineral and Petroleum Resources Development Amendment Bill (the Bill) for public comment .<sup>62</sup> The Bill has made substantive proposals in respect of the fiscal regime for the exploration and exploitation of petroleum resources in South Africa. It was undergoing parliamentary processes from 2013 until 2018 when the then Minister of Mineral Resources (DMR) requested that it be withdrawn from these processes in order to establish a process for the separation of the petroleum provisions into a separate Act. The following proposals were contained in the Bill in respect of the exploration and exploitation of petroleum resources, namely the State's right to a free carried interest in all production rights, with an option to acquire further interest on specified terms through a designated organ of state or through a State owned entity.

The proposal further made provision for issues of special shares that will entitle the state to appoint two directors with alternatives in the managing board of the production operation. These directors were also to receive all dividends and other distributions in respect of the further participation interest.<sup>63</sup> The memorandum of objects to the Bill states that the State rights and options will be exercised having evaluated applicable financial modalities to prioritise and optimise state participation in petroleum exploitation and in line with national developmental priorities. Further that details regarding the extent of free carry interest will be outlined in the regulations and the government gazette. <sup>64</sup> It must be indicated that these provisions do not provide any clarity or certainty regarding the details on state participation in the exploitation of petroleum resources.

However, prior to this Bill the then Department of Mineral Resources had published the Mineral and Petroleum Resources Amendment Draft Bill, B 2012 (Draft Amendment Bill).<sup>65</sup> This Draft Amendment Bill which was ultimately reviewed by Parliament as indicated above. The Bill as published by the Department contained provisions that were slightly more detailed in terms of the state participation in the petroleum sector.

The Draft Bill contained proposals that are slightly more detailed and quite improved from the current fiscal regime.<sup>66</sup> A new section has been inserted, section 86A which is to the effect that the state is to be entitled to a 20% free carry interest through a designated organ of state. Further to this,

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<sup>60</sup> Petroleum Agency SA, Explore SA, available at: <https://www.petroleumagencysa.com/index.php/home-11/licencing/fiscal-terms>.

<sup>61</sup> *ibid*

<sup>62</sup> Republic of South Africa, The Mineral and Petroleum Resources Development Amendment Bill, B15-2013, Government Gazette No. 36523.

<sup>63</sup> See Petroleum Agency SA *supra* n. 60, at 84.

<sup>64</sup> *idem* at 42

<sup>65</sup> Republic of South Africa, The Mineral and Petroleum Resources Development Amendment Draft Bill, B2012, Government Gazette No. 36037.

<sup>66</sup> Republic of South Africa, The Mineral and Petroleum Resources Development Amendment Draft Bill, B15B-2013, available at [https://cer.org.za/wp-content/uploads/2010/08/B15B - 2013\\_19February2014.pdf](https://cer.org.za/wp-content/uploads/2010/08/B15B - 2013_19February2014.pdf).

the state is entitled to a further participation interest which is to be acquired either at an agreed price or by production sharing agreement.<sup>67</sup> The State will enter into a joint operating agreement with the operating company upon acquisition of the interest indicated and will be entitled to a corresponding voting right as per the interest held. The Minister will also appoint two representatives to the joint project committee of the exploration or production operation to represent the State's interest.<sup>68</sup> Although some detail has been provided regarding state participation, this is however, insufficient in terms of its implementation and has not taken into consideration the specifics of the industry which required a differentiated approach from mining operations and between oil and gas operations.

The *Operation Phakisa Oceans Economy* process held in 2014 recognised the potential contribution that the oil and gas sector can make in the South African economy which is at its early stages. An aspirational target of exploration activity was set at 30 exploration wells within a 10-year period. One of the areas identified as a need in order to achieve this aspirational target was the legislative framework which would assist with affirming investor confidence, provide clarity and stability on the full regulatory and contractual package. Some of the stakeholder companies indicated their preference for the completion of the legislative framework including the regulations, particularly the area in respect of "free carry interest" before making investment decisions.<sup>69</sup> Part of the options identified included a short term option of suspending the legislative provisions in respect of state participation as espoused in the MPRDA Amendment Bill. Another option which was long term was for the establishment of the oil and gas sector in a separate legislation as well as the regulator in its own right.<sup>70</sup>

### **3.4. Conclusion**

The South African policy position on petroleum development is still at its developmental phase and evolving as interest in the petroleum development increases and as more information and data on the occurrence of petroleum resources improves. Although not clearly defined, South Africa intends on a robust exploration and exploitation programme of its petroleum resources including shale gas in line with the NDP objectives. This is evidenced by the commitment to drill 30 exploration wells by 2030 through the *Operation Phakisa Oceans Economy* initiative. To give credence to this the necessary regulatory framework needs to be in place and it has been determined that this should be through a separate legislation for upstream petroleum resources development as announced by the Minister of DMRE. The MPRDA Amendment Bill and draft Bill have attempted to advance a regulatory framework on non-tax elements for the exploration and exploitation of petroleum resources. This has however, fallen short in providing the necessary and suitable regulatory framework for the development of these resources and particularly the fiscal proposals contained therein.

As will be illustrated in the following chapter, the proposals have not taken into consideration the relevant elements and principles advanced in the previous chapter for consideration in determining a suitable regulatory for the oil and gas development. The proposals have not in particular addressed the specifics of gas development and especially shale gas development which is quite different from oil resources development. It is thus necessary that South Africa utilises this opportunity afforded by

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<sup>67</sup> See The Mineral and Petroleum Resources Development Amendment Draft Bill, B2012, *supra* n. 65, at 36.

<sup>68</sup> *Idem* at 37.

<sup>69</sup> See *Operation Phakisa Oceans Economy* (2013) *supra* n. 3, at 29

<sup>70</sup> *idem* at 30.

the announcement by the Minister of Mineral Resources and Energy to develop a separate legislation for petroleum resources to address specific issues attendant to the development of gas resources as separate from oil and especially shale gas development. Further, it is necessary to also take into consideration the existing tax regime as contained in tax legislation as this is necessary for an understanding of the complete fiscal regime picture.

## **CHAPTER 4: INPUTS AND CONTRIBUTIONS TOWARDS THE SOUTH AFRICAN NON-TAX FISCAL REGIME REGULATORY FRAMEWORK THAT CAN BE CONSIDERED BY SOUTH AFRICA.**

### **4.1. Introduction**

The development of the South African fiscal regime for shale gas development should be guided mainly by the policy position that provides the necessary direction on the intentions for the development of these resources. However, South Africa is faced by few challenges which include data and knowledge on the occurrence of the shale gas resources. This will have a major impact on the fiscal elements that can be considered to attract investment and commercialise the resources. However, what remains important is the need for the fiscal systems to exhibit principles of a shared value between investors and government as representative of the South African people who are the owners of the petroleum resources. There is also a need to evaluate the existing elements of a fiscal system in line with the particularities of shale gas development which cannot be aligned to the development of oil resources. Thus, a one size fit all approach may not necessarily be suitable in the South African context. There is a number of fiscal elements that can be considered by South Africa for shale gas development which are discussed in this chapter.

### **4.2. Contributions in respect of the principles of a regulatory framework that can be recommended**

Hunter, submits that whichever system that is chosen should not only regulate petroleum activities, but also respond to unique issues raised. This issue includes the long-term relationship between the state and investors exploiting petroleum resources which she terms as volatile, fast changing market, and the need for certainty under those conditions. The regulatory system must also be predictable and transparent with the overarching petroleum objectives of the state.<sup>71</sup>

#### 4.2.1. General Principle

The principle of shared values is most critical in the development of a fiscal regime as it highlights the efficacy of the regime in providing the necessary fair share of economic benefits between investors and host country. A universal definition of the concept of a fair share does not seem to exist however, Agalliu in making this observation indicated that what is a fair share is a judgement or an opinion that can neither be refuted nor proven.<sup>72</sup> In the South African context, the Davis Commission report expressed the following on this issue that the fiscal system must seek to induce maximum effort from the oil and gas companies while ensuring that the host government is adequately compensated.<sup>73</sup> This has also been emphasised by Steenkamp in that ultimately the fiscal regime design should strike a

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<sup>71</sup> T. Hunter, "Sustainable Socio-economic Extraction of Australian Offshore Petroleum Resources Through Legal Regulation: Is it Possible?", *Journal of Energy and Natural Resources Law* 29:2 (2011), at 227.

<sup>72</sup> I. Agalliu, "Comparative Assessment of the Federal Oil and Gas Fiscal System Final Report", *IHS Cambridge Research Associate* (October 2011), at 7

<sup>73</sup> See The Davis Tax Committee (2016) *supra* n. 52, at 12.

balance between risk and reward for both government and for the investor.<sup>74</sup> Land, noted that in favourable times all stakeholders and not only shareholders expect a fair share of the resulting economic benefits which is evidenced by widespread unilateral decisions by governments to redefine fiscal terms under which investment in extractives takes place.<sup>75</sup>

#### 4.2.2. Focus on Non-Tax Elements

It has been indicated earlier that this paper will mainly be focusing on the non-tax elements of a fiscal regime while taking cognisance of the tax elements as this cannot be considered in isolation. This mainly refers to elements of state participation as part of the government take from petroleum resources development. Some of these have been identified by Tordo as non- tax forms of rent collection and includes surface fees, bonuses and production sharing.<sup>76</sup> A number of non-tax elements have been identified earlier on which will be subject of discussion and consideration for a South Africa shale gas fiscal regime.

Cameron, highlighted that the fiscal regime should reflect objectives stated in government policy documents that sets out the overall strategic objectives for the development of the sector.<sup>77</sup> Although there isn't a direct shale gas development policy, various policy and public discourse indicates an intention for the development of these resources particularly to ensure security of supply and as a contribution towards the South African energy mix. This is also important due to challenges that are currently being faced through regular intervals of load shedding. Furthermore, the continued use of mainly coal resources for energy generation in light of the climate change and carbon emissions requirements is not sustainable.

The South African energy generation sector is mostly dominated by coal resources with the other energy sources contributing a lesser share to total primary energy supply. It has been reported that South Africa is the most coal dependant country utilising 85% for electricity generation while renewable energy is gaining momentum through a 20-year project plan of electricity demand and production with 42% of electricity generation to be through renewable sources. However, coal dominance has been observed to be decreasing from 75% in 1994 to 72% in 2014.<sup>78</sup> Furthermore, oil has been indicated to contribute 16.2% to total primary energy supply, while biomass and waste fuels contribute 10.8%, gas contributes 2.9%, nuclear power 2.6%, hydroelectricity and renewables contributing 0.1% respectively.<sup>79</sup> Thus, shale gas development has become a requirement with the other energy sources rather than an option. This has also been clarified by the recently published IRP 2019 highlighting South Africa's energy mix which includes natural gas and specifically shale gas.<sup>80</sup>

In designing a fiscal regime for the exploration of these shale gas resources it is important that significant particularities should be taken into consideration while achieving the concept of fair share revenue of economic benefits between the investors and the State. Furthermore, its equally important to consider developing a fiscal system that is South African context based, namely which will be

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<sup>74</sup> See Steenkamp (2016) *supra* n. 58, at 177.

<sup>75</sup> See Land (2009) *supra* n. 11, at 157.

<sup>76</sup> See Tordo (2007) *supra* n. 10, at 11.

<sup>77</sup> See Cameron (2017) *supra* n. 16, at 151

<sup>78</sup> B.G. Pollet, I. Staffell, K. Adamson, "Current Energy Landscape in the Republic of South Africa", *International Journal of Hydrogen Energy* 40 2015, at 16687-16688.

<sup>79</sup> See Steenkamp (2016) *supra* n. 58, at 144.

<sup>80</sup> See, *Integrated Resources Plan (2019) supra* n. 44.

economically and sustainably suitable for the development of these resources in South Africa. The South African upstream petroleum industry is regarded as nascent in that there has not been an aggressive exploration and exploitation activities taking place compared to the mining side which had over 100 years of prospecting and extraction.<sup>81</sup> Therefore, this implies that there is a disparity of data and information regarding shale gas resources occurrence, quantification and economic extractability which is necessary for investors to make informed investment decisions on the potential of shale gas resources.

Currently, only just five (5) exploration right applications which are still being processed have been lodged by Shell International, Falcon Oil and Gas in partnership with Chevron, and Bundu Gas.<sup>82</sup> The estimation of technically recoverable shale gas resources thus far has varied from different sources. The United States Energy Information Administration has indicated this to be at 390 tcf which was a down grade from an initial estimation of 485 tcf.<sup>83</sup> PASA had also provided an estimation of these resources as between 30 tcf – 500 tcf.<sup>84</sup> This is an illustration of the uncertainty which currently exist and which increases the risks to exploration of these resources.

Wang, observed how the United State amongst other things made provision for a phased removal of well head price controls and provided incentive pricing for developing new natural gas including unconventional gas through the Natural Gas Policy Act of 1978. This was further complimented by the establishment of R & D programmes by federal agencies.<sup>85</sup> The Federal R&D funding also contributed to the realisation of the industry first multi-fracture horizontal drilling project in 1986.<sup>86</sup>

#### **4.3. A South African Perspective**

There are several issues that have been identified earlier in the previous chapter that can have an impact on shale gas development in South Africa. The “*South Africa’s Technical Readiness to Support the Shale Gas Industry*” report identified further that the exploration process or phase will face the following challenges when it comes to South African capacity to explore and exploit shale gas resources, namely:

- Lack of availability of sufficient drilling rigs to support the development of the shale gas industry. A comparison of the size of the South African Karoo Basin estimated at 600 000 km<sup>2</sup> with the USAs Permian Basin estimated at 86 000 km<sup>2</sup> and where 1000 rigs are operating, it is estimated that 200 to 500 rigs are required to operate in the Karoo should the commercial exploitable area be between 60 000 to 200 000 km<sup>2</sup>. South Africa will be required to develop this capacity or import a large number of rigs into the country.<sup>87</sup>
- Although it has been identified that South Africa does not lack capacity in cement supply however, the challenge will be in the cement quality required to support the hydraulic fracturing process. Thus, South African cement producers will need to adjust to the quality

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<sup>81</sup> See Casey *supra* n. 1.

<sup>82</sup> See Petroleum Agency South Africa, *supra* n. 2.

<sup>83</sup> See Steenkamp (2016) *supra* n. 58, at 153.

<sup>84</sup> See Petroleum Agency South Africa *supra* n. 82.

<sup>85</sup> Z. Wang and A. Krupnick, A Retrospective Review of Shale Gas Development in the United States: What Led to the Boom?, *Resources for the Future* (2013), at 7

<sup>86</sup> See Nulle (2015) *supra* n. 34, at 242

<sup>87</sup> Academy of Science of South Africa, ‘*South Africa’s Technical Readiness to Support the Shale Gas Industry*,’ October 2016, at 136

requirements and also develop major oilfield service providers which are not available domestically.<sup>88</sup>

- There is also a challenge that there is only one producer of steel casing strings in term of the required international standards, American Petroleum Institute ('API), International Organization for Standardization ('ISO') and European Standards ('EN') for oil and gas industry.<sup>89</sup> The production quantity of casings strings from this producer will not be sufficient to meet the growing needs for the shale gas industry and South Africa may need to develop more or rely on imported cement.
- Challenges regarding gas distribution networks have also been identified in that apart from the PetroSA (the state-owned petroleum company) pipeline to Mosgas refinery natural gas transmission and distribution is concentrated in the Gauteng and Mpumalanga province. It is owned through private and public arrangement between Sasol, Mozambique and iGas, a South African state-owned gas company. This is very limited compared to the extensive and well-established natural gas networks to service diverse markets opportunities in the United Kingdom and USA. <sup>90</sup> Thus, South Africa will be required to establish a gas market and the necessary supply infrastructure to these markets.
- A significant consideration reported by the South African Oil and Gas Alliance (SAOGA) is their declaration that local gas exploration needs to confirm a minimum reserve of 10 tcf to be competitive with gas imports and complete the gas value chain and maximise market off-take prospects.<sup>91</sup> To this, the exploration programme is required to commence in earnest for any confirmation of reserves to be quantified and as indicated in the report earlier for any potential customers to be anchored.
- There is great potential for a gas resource domestic market particularly for electricity supply to which South Africa is in great need due to staggered electricity supply shortages being experienced. The potential is seen in the development of gas fired power plants which are reportedly cheaper and faster to build than other base-load options.<sup>92</sup> It is also indicated that although the South Africa's installed gas turbine capacity is small and mainly dominated by Eskom's, two turnkey diesel-fired open cycle peaking power plants, the business to convert both these into combined cycle operation is achievable through predictable and affordable natural gas.<sup>93</sup> Notably, there is opportunity for the gas industry supply taking into accounting the pricing differentiation between the different industries. Other opportunities are available for chemical feedstock in respect of which South Africa has a long history based on coal conversion.<sup>94</sup> Transport opportunities for the use of gas for transporting fuel and for domestic is predicated on environmental considerations and gas price.
- Due to lack of upstream gas activities in South Africa there are also adverse skills shortages in this area which will result in the need for such skills to be imported for the purposes of initiating these activities while also developing local skills. It is suggested that on the job training and development should be emphasised for this and through sending local specialists

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<sup>88</sup> *Idem*, at 136-137.

<sup>89</sup> *Idem*, at 137.

<sup>90</sup> *Idem*, at 140.

<sup>91</sup> See Academy of Science of South Africa *supra* n. 87, at 141

<sup>92</sup> *Idem*, at 142

<sup>93</sup> *Idem*, at 143

<sup>94</sup> *Idem*, at 145

to operations located elsewhere in the world by local operators for accelerated learning and development.<sup>95</sup>

The above have been complimented by Hedden, indication that shale gas production in the Karoo will require heavy investment in the infrastructure, midstream infrastructure such a natural gas pipeline, roads and possibly water pipelines as well as downstream refineries, power plants and distribution networks.<sup>96</sup>

#### **4.4. Input in terms of non-tax regulatory construction that can be recommended**

Nakhle, highlights the two types of systems for granting of rights, namely the concession and the contractual scheme.<sup>97</sup> The concession is described as a contract between government and a company which grants the company the right to explore for, develop, produce, transport and market petroleum resources at its own risk and expense within a fixed area for specified fixed time period. The concession provides the company with the right or title to produce oil at the well head with the obligation to pay appropriate taxes and royalties.<sup>98</sup> Furthermore, an oil and gas company typically pays royalties and corporate income tax and other government payments may be applicable such as bonuses, rentals, resource taxes and windfall profit taxes.<sup>99</sup> The concession scheme is said to be mostly favoured by developed states and still dominated by Organisation for Economic Co-operation and Development ('OECD') Countries. Countries such as the United Kingdom, Brazil, Canada, United States and Norway operate a concession regime.<sup>100</sup>

The contractual system is separated in two, namely production sharing contract (PSC) or a risk service contract (RSC). In a PSC the contractor owns part of the production while the government owns all fixed equipment and installations from commissioning.<sup>101</sup> Cameron, notes that production sharing packages typically provide the state with a percentage share of the production in addition to any taxes or royalties that may be collected. Furthermore, PSCs are usually found in developing countries where the host government retains a strong interest in attracting foreign investments. While under RSCs companies perform upstream activities at their risk in exchange for an agreed service fee. RSCs are typically found in countries with large known reserves and production bases and low geological risk such as the Republic of Bolivariana de Venezuela and certain Middle Eastern states such as Iraq.<sup>102</sup> Under a PSC all production belongs to the state and the service fee payed to the contractor may be subject to tax. Further, the risk lies in the contractor putting up all the capital and risks being exposed to cost overruns which it typically is unable to recover.<sup>103</sup>

It's important as stated by Cameron to ensure fiscal regime considerations as a whole and not individual instrument because of the economic interactions between them.<sup>104</sup> An element that can be

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<sup>95</sup> *idem* at 157

<sup>96</sup> S. Hedden, J. D. Moyer and J. Rettig, Fracking for Shale Gas in South Africa: Blessing or a Curse?, *African Futures Paper 9* (2013), at 7.

<sup>97</sup> See Nakhle (2010) *supra* n. 26, at 93

<sup>98</sup> *Idem* at 94.

<sup>99</sup> See Steenkamp (2016) *supra* n. 58, at 193

<sup>100</sup> See Nakhle (2010) *supra* n. 26, at 93

<sup>101</sup> See Karasalihovic-Sedlar (2017) *supra* n. 19, at 47.

<sup>102</sup> See Cameron (2017) *supra* n. 16, at 154

<sup>103</sup> See Nakhle (2010) *supra* n. 26, at 103

<sup>104</sup> See Cameron (2017) *supra* n. 16, at 154



implemented is a tax and royalty system. Cameron has indicated that this can comprise of corporate income tax on profits, royalty on production and additional charge on profits or rents called profit tax or resources rent tax. These are indicated to be popular particularly in Northern America and Europe while becoming less popular in developing countries.<sup>105</sup> Although these instruments are usually clearly indicated through legislation provision and predictable, they may need to be partnered with other fiscal instruments under the South African context and environment.

The fact that they are popular amongst the developed countries is testament to this, as these jurisdiction's data and information regarding the occurrence of extractives and particularly petroleum resources including shale gas is well known due to that extensive exploration activities have taken place over the years. This is unlike South Africa where the potential for shale gas resources is still to be confirmed. Further, very little if any exploration activities in respect of shale gas resources have taken place in South Africa and the received applications for exploration rights are still being processed at this stage. This implies that developed states have already established internal capacity to manage and control shale gas development activities unlike in South Africa where internal capacity issues have been identified as a constraint, amongst other challenges mentioned above.

Cameron, has also pointed out that royalties are said to be one way in which the state is compensated for the permanent loss of valuable of the non-renewable resources. This is the rational for their use and the reason they are not strictly regarded as tax.<sup>106</sup> Minh-Thong Le, has highlighted the need to provide specific shale gas rates such as in Poland where a royalty rate of 1.5% compared to 3% for conventional gas is imposed. While Britain has decided on a 30% revenue tax rate for shale gas compared to 62% conventional oil and gas.<sup>107</sup>

Another element that can be considered is state participation. McPherson, has highlighted that state participation has been embraced in a number of forms by the State, namely full equity participation, carried interest equity participation, free equity participation and production sharing. Full equity participation involves the State either undertaking petroleum activities on its own without assistance from the private sector or investing with the private sector from the start of operations by acquiring a majority or minority share in an unincorporated joint enterprise or acquiring a participating share in an unincorporated joint enterprise. This is common in the Middle Eastern oil producing countries and in Mexico where the constitution excludes private participation in petroleum.<sup>108</sup>

Carried equity participation is where the private sector carries the costs of the State in a partnership for a project from exploration, appraisal and possibly development. The private sector may or may not be compensated funds advanced on the state behalf and where compensation occurs it may be with interest or uplift in recognition of the risk incurred on the states behalf.

A full carry is where all costs are borne by the private investor and compensation for States participation is paid out of the proceeds of the project.<sup>109</sup> Free equity participation is a grant of an

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<sup>105</sup> Ibid

<sup>106</sup> See Cameron (2017) *supra* n. 16, at 156

<sup>107</sup> L. Minh-Thong, An Assessment of the Potential for the Development of Shale Gas Industry in Countries Outside of North America, *Heliyon 4* (2018), at 21

<sup>108</sup> C. McPherson, "State Participation in the Natural Resources Sectors", in P Daniel, M Keen and C McPherson (eds), *The Taxing of Petroleum and Minerals: Principles, Problems and Practice*, (Routledge, 2010), at 266.

<sup>109</sup> *Idem* at 267

equity interest directly to the state without any financial obligation or compensation to the private investor.<sup>110</sup>

Production sharing is described as like free equity participation in that it provides the state with an equity share after income and cost recovery by the private investor without any offsetting financial obligation. However, it goes further by involving state representation by a national oil company (NOC) to actively participate in operations as a commercial party, regulator and a fiscal agent. Production sharing is often combined with some form of equity participation by the NOC either at 100% or carried interest.<sup>111</sup> Production sharing contract system which can include the same instruments under tax and royalties and its distinguishing feature is that it typically provides the state with actual production over and above the tax and royalty collected. As a result, the tax and royalties would be lower. This system is said to be usually found in developing countries where the host government retains a strong interest in attracting foreign investment.<sup>112</sup>

Steenkamp, points out that in a production sharing agreement where there's a cap on the deduction of cost and this limit has been reached, profit oil will be shared as soon as production has commenced while other fiscal elements remain applicable to the state namely royalties and corporate income tax. He further indicates that production sharing is a flexible tool that can be wielded to adjust the fiscal package to suit a particular project without changing the overarching fiscal framework. However, a warning and cautionary position is advanced in that this element can be complicated to administer and the agreement can become inappropriate as the real profitability of the project becomes known. Further the contractor can have an unfair information advantage over government to secure proper share of economic rent.<sup>113</sup>

South African can utilise the abovementioned elements both through the concession system in respect of equity partnership in various forms indicated or through a production sharing agreement based on its needs and the need to address its challenges as identified earlier in this chapter. One of the main issues faced by South Africa outside of the economic benefits is lack of knowledge and information regarding shale gas resources including technical aspect of the extraction of these resources. Thus, active participation through equity stake in projects can be a method of addressing this while also addressing the issue of economic benefits through appropriate tax instruments.

Steenkamp, has highlighted that through equity participation the state can be able to achieve non-economic objectives such as increasing a sense of ownership, facilitating transfer of technology and know-how, providing more direct control over project development or linking mineral development with national development objectives.<sup>114</sup>

McPherson, also indicates state participation objectives include the expectation of the state to regulate, or rein in the behaviour of the private sector to in line with national interest, to build national capacity through transfer of managerial and technical skills and information. Further to address a wide range of development goals outside the resources sectors which include job creation, promotion of local content, provision of social and physical infrastructure, regional development, income transfer

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<sup>110</sup> *Ibid*

<sup>111</sup> *Ibid*

<sup>112</sup> See Cameron (2017) *supra* n. 16, at 156

<sup>113</sup> See Steenkamp (2016) *supra* n. 58, at 194

<sup>114</sup> *Ibid*

through supply of products at subsidised prices.<sup>115</sup> These identified objective are very synonymous with South African needs particularly in the areas of data and knowledge development which includes capacity development. Furthermore, the need to establish a competent supplier industry to support the extractive industry and the development of local market supported by a local distribution network that can facilitate the establishment of other downstream industry development for broad economic opportunities within South Africa.

It must also be pointed out that South Africa is currently facing an urgent challenge of constant energy supply as regular load shedding is implemented thus affecting the whole economic development agenda as postulated in the NDP. State participation also provides an opportunity for the state to guard against wasteful expenditure which can impact costs and costs recovery should this be applicable and ensure sustainable development of resources in line with applicable social and environmental regulatory framework. The aspect of environmental management is particularly important for shale gas development taking into consideration water issues in the Karoo, agricultural and tourism activities including heritage and maintenance of the sanctity of attractiveness of the area.

The warning indicated by Steenkamp as stated above can be mitigated through the development of capacity of relevant officials responsible for the regulation of these agreements. Furthermore, South Africa does have knowledge of the petroleum industry which has developed over the years through the national oil and gas company PetroSA that can be shared. Also, Sasol Ltd as a South African Company has these expertise and knowledge of petroleum sector. The flexibility nature of the production sharing agreement provides an opportunity for a smart restructuring of the fiscal elements both tax and non-tax to ensure that principles of shared value are entrenched therein including legal instruments that can enable a review of the agreement as a result of new information and data being discovered.

McPherson, has identified other challenges with the implementation of production sharing include the tendency of resource wealth to undermine governance in resource rich countries, funding of state participation which can draw resources away from other urgent budget priorities thus undermining overall development objectives and creating social and political tensions and conflicts of interest.<sup>116</sup> In respect of these challenges there are already established state and non-state institutions such as the National Treasury, the Department of Public Enterprise, the Auditor General, the Public Protector and independent judicial and quasi-judicial institutions to name a few which independently work to safeguard against such challenges. Furthermore, a regulatory framework and practices that prescribe and insist on accountability and transparency will serve as a deterrent against nefarious practices together with legislative clarification of roles between the National oil and gas company and institutions responsible for regulating the industry will assist to avoid any conflict of interest.

In respect of affordability for South Africa to get into equity partnership with private investors for shale gas development, this can be addressed through the appropriate imposition of relevant tax and non-tax instruments such as carried participation supported by a cost recovery mechanism aligned with a cost recovery limit. This can enable the South African Government to avoid the financial risks associated with exploration, appraisal and production at initial stage of the project. These costs are to

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<sup>115</sup> See McPherson (2010) *supra* n. 108, at 268

<sup>116</sup> *ibid*

be deducted later during production through costs recovery. The cost recovery limitation can be appropriately structured to ensure that there are proceeds that accrue to the State upon commencement of production.

State participation in Angola is set at 25%. In Cote d'Ivoire state participation goes up to 20% in the following manner 10% initial interest is issued and an additional 10% interest is carried through exploration and development. In Ghana the initial state participation is between 10-15% carried interest through production and additional participation varies in each agreement from 2.5%- 15%.<sup>117</sup>An option to acquire further equity by the state can also be built into the fiscal system which can be activated upon commercial discovery in South Africa.<sup>118</sup>

The RSC system appears to be appropriate at a later stage of development in the South African petroleum industry. This is due to that insufficient data and information regarding the occurrence of petroleum resources is currently known especially on shale gas resources. Moreover, the particularities of shale gas do not support the implementation of RSC due to high costs attendant to the risks of exploration and production. Currently the downstream requirements and market conditions do not support the implementation of this system. However, this system can be considered for inclusion in the regulatory framework for implementation once the relevant challenges have been addressed and South Africa is able to carry the cost of exploration and production independently. This system can at a later stage be inserted for the development of other petroleum resources to the exclusion of shale gas resources.

Another element that can be considered are signature and production bonuses. It's been indicated that Exxon Mobil agreed to a US\$21.25 million with the Liberian National Oil Company in 2013.<sup>119</sup> While in 2007 a Chinese mining consortium CMCC agreed to pay the government of Afghanistan signature bonus of US\$808 million and a further US\$566 million upon commencement of commercial production. While it is further reported that Angola received more than US\$1billion as a top bid for its petroleum rights in 2006.

Its advised that these bonuses should not be seen as add-ons and its normal for investors to seek some offset to bonus payments through other elements of the fiscal regime. However, governments continue to rely on other contingent instruments linked to project outcomes while including signature bonuses to compliment these.<sup>120</sup> In Angola signature bonuses are included as bid items for competitive licensing rounds and the country's track record honouring contracts and oil prospectively has resulted in significant bonuses.<sup>121</sup> Although bonuses can have significant benefits especially for South Africa where technical skills and knowledge is needed for the development of a shale gas industry it may not be appropriate to impose bonuses at this stage. This is due to the fact that South Africa still needs to develop the industry first and bonuses are a regressive system for this purpose.

Furthermore, South Africa is still to establish the necessary gas infrastructure and processes to commercialise the exploitation of shale gas resources. Thus, an element that has a regressive impact

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<sup>117</sup> J. Amoako-Tuffour and J. Owusu-Ayin, "An Evolution of Ghana's Petroleum Fiscal Regime", *The Ghana Policy Journal* (2010), at 18

<sup>118</sup> *Idem* 21

<sup>119</sup> See Cameron (2017) *supra* n. 16, at 157

<sup>120</sup> *Idem* at 158

<sup>121</sup> *Idem* at 164

on the shale gas industry at an early stage may not be appropriate and will be appropriate at a later stage when the necessary data and knowledge on the resource is well known and documented allowing the state better control of shale gas development activities. However, if there is a need for imposition of bonuses it is advised that production bonus would be appropriate as it's based on production when companies are generating revenue from the shale gas resources.

The South African experience and environment can be contrasted with Namibia's effort to promote frontier petroleum exploration by implementing a fiscal regime that excluded state participation and signature and production bonuses. Also, other upfront payments as means of incentivising growth of its petroleum industry.<sup>122</sup> This was however, balanced by the imposition of a progressive Additional Profit Tax at progressive thresholds rates of return as follows 15%, 20% and 20%. This was to ensure corresponding increase of both investors' profitability and state revenues equitably.<sup>123</sup>

This brings us to another element that South African can consider, namely the RRT. It involves three elements in designing namely, a specified rate of return on investment which triggers the imposition of the tax, a specified tax rate imposed on net profit once the rate of return is exceeded. It will also require a tax base with an individual resource project and allowable deduction.<sup>124</sup> This element can be implanted through both production sharing and equity arrangement. In production sharing this can be implemented by allocating all production to the company until costs are fully recovered including a cost uplift corresponding to the rate of return threshold and allocating a share, equivalent to the tax rate of any profit thereafter to the tax rate, of any profit thereafter to the Company. While in equity arrangements where the states equity is acquired by means of a loan secured against the project cash flows, dividends receipts will commence once the loan plus interest has been paid in full.<sup>125</sup> These arrangements could work better and effectively for South Africa as this is a back-end targeted tax mainly at super profits.

Furthermore, an RRT based on sliding scale linked to production, prices, unit costs or a combination can be designed as they are linked to profitability. This would be in line with the principle of shared value from proceeds of petroleum resources. It would also be more appropriate for the development of shale gas resources which require extensive upfront capital investment due to the technical nature of the extraction method. Several jurisdictions that implemented the RRT includes Australia with a single rate of 40%, Namibia with a three tiered sliding scale as indicated above, Malawi at 10%, Ghana at 35% and Liberia at a single rate of 20%.<sup>126</sup>

Another notable element that needs to be carefully considered particularly in the context of shale gas development is that of community development or corporate social responsibility (CSR). This is due to the sensitive nature to which the exploration and exploitation of shale gas resources is perceived by communities that have raised a number of issues, and which resulted in the implementation of the moratorium in South Africa.<sup>127</sup> It has been indicated by Cash that the World

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<sup>122</sup> S.K. Date-Bah, Promoting Petroleum Exploration in Namibia, *Resources Policy* V 20 n. 4 (1994), at 267

<sup>123</sup> *Idem* at 268

<sup>124</sup> See Land (2010) *supra* n. 17, at 247.

<sup>125</sup> *Idem* at 248

<sup>126</sup> *Idem* at 259

<sup>127</sup> Republic of South African, Restriction in Terms of Section 49(1) of the Mineral and Petroleum Resources Development Act, 28 of 2002 on Granting of Applications for Reconnaissance Permits, Technical Cooperation

Business Council for Sustainable Development has defined CSR as a strategy which contributes to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.<sup>128</sup> Raufflet, has identified three main sources of CSR namely, the first is from the host governments which enforce specific formal policies and define company requirements. The second is defined as infrastructure for CSR which promotes voluntary non- government led, CSR initiatives and responses and for which international financing institutions such as the World Bank and International Financing Corporation have developed frameworks. The third is from the companies themselves in the absence of government or industrial association policies, companies may decide and implement best practice according to their interests.<sup>129</sup> These CSR sources are closely related to the transformational agenda of South Africa's national development imperatives.

South Africa has not currently developed a social and economic framework for the petroleum industry similar to the existing Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry (the Mining Charter). However, as indicated in an earlier chapter transformation in the petroleum industry is implemented through a Ministerial Directive which prescribed 10% participation. But it must be noted that transformation is only focused on one aspect, which is ownership relative to a broader perspective on transformation from the Mining Charter. The implementation and enforcement of the Mining Charter has been called into question in the recent past resulting in the recent review of the Charter undergoing court processes. It is thus critical that lessons learned from the mining side should influence and guide the development of a petroleum transformational charter.

Cash, indicates the areas that such a development should address drawing from the CSR definition by the World Business Council for Sustainable Development, namely areas of health, education, environment and human rights.<sup>130</sup> The objectives for this development is also highlighted as to mainly avoid the *Dutch Disease* and the *Resource Curse* which was experienced by Nigeria during the oil boom of early 1970.<sup>131</sup> Further, to assist the governments in developing the necessary capacity to manage proceeds and revenues from natural resources, CSR must supplement government-led projects instead of this being led by companies which is undesirable and may lead to stagnant development.<sup>132</sup>

These objectives can be of great assistance in South Africa to guide the development of this aspect, taking into consideration the environmental and socio-economic issues attendant to shale gas development in the Karoo region. Also, to this a more inclusive and robust monitoring and evaluation process can be developed as highlighted in Raufflet which advocated for a hybrid regulation characterised by the interplay of political actors such as government agencies, social actors such as non-government organisations and economic actors such as companies and industry associations.<sup>133</sup>

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Permits, Exploration Rights and Production Rights in Terms of sections 74,76,79 and 83 of the Act, (3 February 2014), Government Gazette No. 372994.

<sup>128</sup> A. Cash, "Corporate Social Responsibility and Petroleum Development in Sub-Saharan Africa: The Case of Chad", *Resource Policy* 37 (2012), at 144.

<sup>129</sup> E. Raufflet, L.B. Cruz and L. Bres, "An Assessment of Corporate Social Responsibility Practices in the Mining and Oil and Gas Industries", *Journal of Cleaner Production* 84 (2014), at 256.

<sup>130</sup> See Cash (2012) *supra* n. 128.

<sup>131</sup> *Idem* at 145.

<sup>132</sup> *Idem* at 146.

<sup>133</sup> See Raufflet (2014) *supra* n. 129, at 257.

#### **4.5. Conclusion**

The South African fiscal regime for shale gas should be aimed at implementing the principle of shared value between right holders and the state taking relevant aspects into considerations. This should be shaped by national Policy of shale gas development as contained in national policy documents and relevant pronouncements. Shale gas specific practicalities which are different from other petroleum resources should form part of the main considerations. Furthermore, the South African specific development challenges need to be considered in order to find that delicate balance in interests of the two parties. There are various elements that can be considered, and it is critical that both tax and non-tax elements are considered in order to ensure the attractiveness of the fiscal regime while addressing specific South African shale gas development particularities. It is also essential that the fiscal regime remain flexible in order to adjust easily to any exogenous factors.

## CHAPTER 5: CONCLUSION

### 5.1 Introduction

The development of a fiscal regime for shale gas in South Africa will be influenced by a variety of factors which includes the historical development of the oil and gas sector and the resources available. Further, issues such as the risk profile as determined by available geological data and historical evidence of successful development of the oil and gas resources will also have an impact. The variety of non- tax fiscal instruments that can be considered include the various bonuses government participation, . However, these cannot be considered in isolation of tax instruments which play a pivotal role in the overall fiscal system. This system will have a determining effect on the economic viability of shale gas development in South Africa and thus also serve to attract necessary investment through a fiscal system premised on the principles of shared value.

### 5.2 The South African Petroleum fiscal Regime Policy Position

The South African policy position on petroleum development is still at its developmental phase and evolving as interest in petroleum development increases and as more information and data on the occurrence of petroleum resources improves. South Africa intends on engaging on a robust exploration programme of its petroleum resources including shale gas in line with the NDP objectives evidenced by the commitment to drill 30 exploration wells by 2030 through the *Operation Phakisa Oceans Economy* initiative. This will however require that the necessary regulatory framework be in place through a separate legislation for upstream petroleum resources development as announced by the Minister of Mineral Resources and Energy. The review of the MPRDA to incorporate revised fiscal provisions for oil and gas development have fallen quite short in providing the necessary and suitable regulatory framework for the development of these resources.

The proposals have not addressed the specifics of gas development and especially shale gas development which is quite different from oil resources development. It is thus necessary that South Africa utilises this opportunity afforded by the announcement by the Minister of Mineral Resources and Energy to develop a separate legislation for petroleum resources to address specific issues attendant to the development of gas resources as separate from oil and especially shale gas development.

In developing a fiscal regime for shale gas, South Africa should be guided by the principle of shared economic value between right holders and the state taking relevant aspects into considerations. These include the shale gas specific practicalities which are different from other petroleum resources and the South African challenges which need to be considered in order to find that delicate balance in interests of all stakeholders. There are various elements that can be considered and it's critical that both tax and non-tax elements are considered in order to ensure attractiveness of the fiscal regime while addressing specific South African shale gas development particularities. It is also essential that the fiscal regime remain flexible in order to adjust easily to any exogenous factors.



### 5.3 Shale Gas Fiscal Elements for Consideration in the Development of a Petroleum Fiscal Regime.

Various elements can be explored in the construction and development of a fiscal regime for shale gas industry. It is recommended that South Africa considers a back end loaded system that can comprise of equity participation through a concession licensing system or a production sharing agreement which is more flexible in nature. This is specially to accommodate shale gas development projects which have specific technical and economic peculiarities which cannot be accommodated in a general oil and gas fiscal system. Some allowances and support will be required that will necessitate flexibility in the application of the fiscal regime enabling exploration activities to take place that will lead to confirmation of the shale gas resources and data on quantity and quality.

South Africa can also consider an RRT system using a scale to capture profits at various production levels which can make up for the allowances provided at the start of the project. Further consideration that needs to be included is that of community development or CSR particularly for shale gas development due to various concerns raised by communities in the Karoo basin. This can be developed through experiences gained during the development of the Mining Charter. This can also serve to bring the petroleum companies and communities closer together as it will illustrate a sense that petroleum companies are alive to issues as raised by communities. Further that companies are prepared to mitigate and compensate communities for any discomforts that may be faced. Thus, this aspect will need to be carefully designed for this purpose including its implementation and monitoring aspect.

### 5.4 Conclusion

A suitable fiscal regime is fundamentally important for the development of the shale gas industry. The exploration of shale gas resource in South Africa has become urgent in order to support energy generation and contribute to the energy mix as stipulated in the NDP and IRP. This fiscal regime must pay credence to the specifics of shale gas development within the South African context while also ensuring a shared value proposition for stakeholders.

The fiscal regime must also ensure that the tax and non-tax elements developed are influenced and guided by these principles as they are not mutually exclusive. South Africa should consider the RRT as an option due to its back-end properties. As a result, a flexible fiscal system should be considered to ensure the necessary factors indicated in this paper are accommodated for the successful exploration and exploitation of shale gas resources in South Africa.

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