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**The Kudu gas project: An analysis of the legal risk to the development of
offshore upstream gas operations.**

By

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Submitted in partial fulfilment of the requirements for the degree

MAGISTER LEGUM (LLM) IN EXTRACTIVE INDUSTRY LAW IN AFRICA

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ABSTRACT

The overall need for the Kudu Gas Project is for Namibia to meet its projected electricity demand and to export excess power to neighboring countries. As the Namibian population grows and the economy develops so does the increase in the demand for electricity and the current generation capacity is below the demand needed and this has led to Namibia importing approximately over 50% of its electricity demands from other utilities in the region, primarily Eskom of South Africa. The development of operations of the Kudu gas field would therefore be imperative for the energy supply goals of the country as it is also in line with the main targets of the Namibia white paper on energy policy aiming towards reducing electricity imports and achieving security of electricity supply in Namibia.

Although the Kudu gas field was discovered in 1974, today in 2018 which is 44 years later, gas operations have still not commenced. This raises a point of concern as to what the possible delay to the project is, accordingly this paper focused on establishing how legal risks may have contributed thereto by assessing how legal risks affect offshore upstream gas operations. This was done by conducting a legal risk analysis of the legal framework that governs legislative and contractual upstream gas risk and determining what the consequences of these risks are towards the development of the Kudu gas project. It was established that that legal risk can hamper the development of offshore upstream operations quite negatively if legal compliance to the regulatory requirements are not adhered to, however, from the information available at the time this study was done, the Kudu gas project complies very well with regulatory requirements and the project delay is not linked to legal risks. The paper observed that other risks to the project, namely market and financial risk may be the underlying cause of the project delay. As oil and gas operations are plagued with various risk and constant increases in regulatory pressure the recommendations of this paper were directed towards the establishment of a risk management process for the Kudu gas project which will identify and monitor risks and implement risk responses that have been established by internal risks controls to mitigate and avoid the stern consequences that come with no- compliance with legal and regulatory requirements.

LIST OF ACRONYMS

DBMN	De Beers Marine Namibia (Pty) Ltd
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act 7 of 2007
GSA	Gas Supply Agreement
MME	Ministry of Mines and Energy
MPA	Model Petroleum Agreement
NAMCOR	National Petroleum Corporation of Namibia (Pty) Ltd
NAMDEB	Namibia and De Beers (NAMDEB Diamond Corporation (Pty) Limited)
NAMPOWER	Namibia Power Corporation (Proprietary) Limited

KEYWORDS

Legal risk, regulatory framework, upstream gas, offshore, oil and gas law, electricity security of supply, looming energy crisis, petroleum, petroleum licenses, petroleum agreement, environmental management.

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CHAPTER 1- INTRODUCTION

1.0 Background of the Kudu gas field

The African continent is generally richly endowed with petroleum resources including oil and natural gas.¹ Namibia however does not offer easily exploitable petroleum reserves, apart from its natural gas resources at the Kudu gas field.² As a result thereof, the main source for natural gas in Namibia is the Kudu gas field which is located 170 km off the south coast of Namibia and was discovered in 1974³ when a joint venture involving, Chevron, Regent and Soekor drilled the first well Kudu (9A-1) offshore Namibia.⁴ Exploration wells drilled during 1987-1988 and 1996-1997 confirmed the Kudu gas discovery was commercially exploitable.⁵ The Kudu gas field's proven natural gas reserves are estimated at 1.3trillion cubic feet and possible reserves at nine trillion cubic feet.⁶

The development of the gas field is set to comprise of four sub-sea wells tied to a subsea manifold from which a pipeline will transport the gas to onshore production facilities for final conditioning prior to sale to the power station.⁷ Phase 2 developments involve drilling an additional four sub-sea production wells, linked via flow lines to a second sub-sea manifold, which in turn will be connected to the Phase 1 manifold.⁸ The Phase 1 gas pipeline, monoethylene glycol line and control umbilical's will all have sufficient capacity to allow for Phase 2.⁹

¹ Mailula D.T. "Protection of petroleum resources in Africa: a comparative analysis of oil and gas laws of selected African states." 2013 (Accessed on 11 September 2018).

² Factsheet CCS in Namibia. Desert Research Foundation of Namibia, 2010 at page 1. Available at: www.ccs-africa.org/fileadmin/ccs-africa/user/CCS_Africa_2/Namibia_factsheet.pdf (Accessed on 17 October 2018).

³ "About us" on the Ministry of Mines and Energy website. Available at: <http://www.mme.gov.na/petroleum/kudugas/> (Accessed on 25 July 2018).

⁴ Offshore Namibia -Lüderitz basin, SericaEnergy Project Introduction Synopsis (September 2018) at page3. Available at: [http://envoi.co.uk/wp-content/uploads/2018/09/P252Serica\(Namibia\)Synopsis.pdf](http://envoi.co.uk/wp-content/uploads/2018/09/P252Serica(Namibia)Synopsis.pdf). (Accessed on 13 July 2018). The full history of the kudu license holders

⁵ Kudu Gas to Power Project: Integrated Impact and Mitigation Report, The Southern African Institute for Environmental Assessment May 2006. Available at: www.the-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf

⁶ <https://www.offshore-technology.com/projects/kudugasfieldnamibia/> (Accessed 25 July 2018).

⁷ Kudu Gas to Power Project: Integrated Impact and Mitigation Report, The Southern African Institute for Environmental Assessment May 2006. Available at: www.the-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf at page29.

⁸ *Ibid* at page 30.

⁹ *Ibid* at page 31.

The entire production from the Kudu gas field will be used to generate electricity at Uubvlei in the vicinity of Oranjemund.¹⁰ Initially an 800MW power plant was set to be supplied with gas; however, this capacity was downsized in April 2018 to 475MW.¹¹ It was reported that this due to the power demand load forecast for Namibia.¹² Despite the kudu gas field being discovered in 1974, gas operations have not commenced and while this delay could be due to other factors, this paper focuses on establishing how legal risks may have contributed thereto by assessing how legal risks affect offshore upstream gas operations.

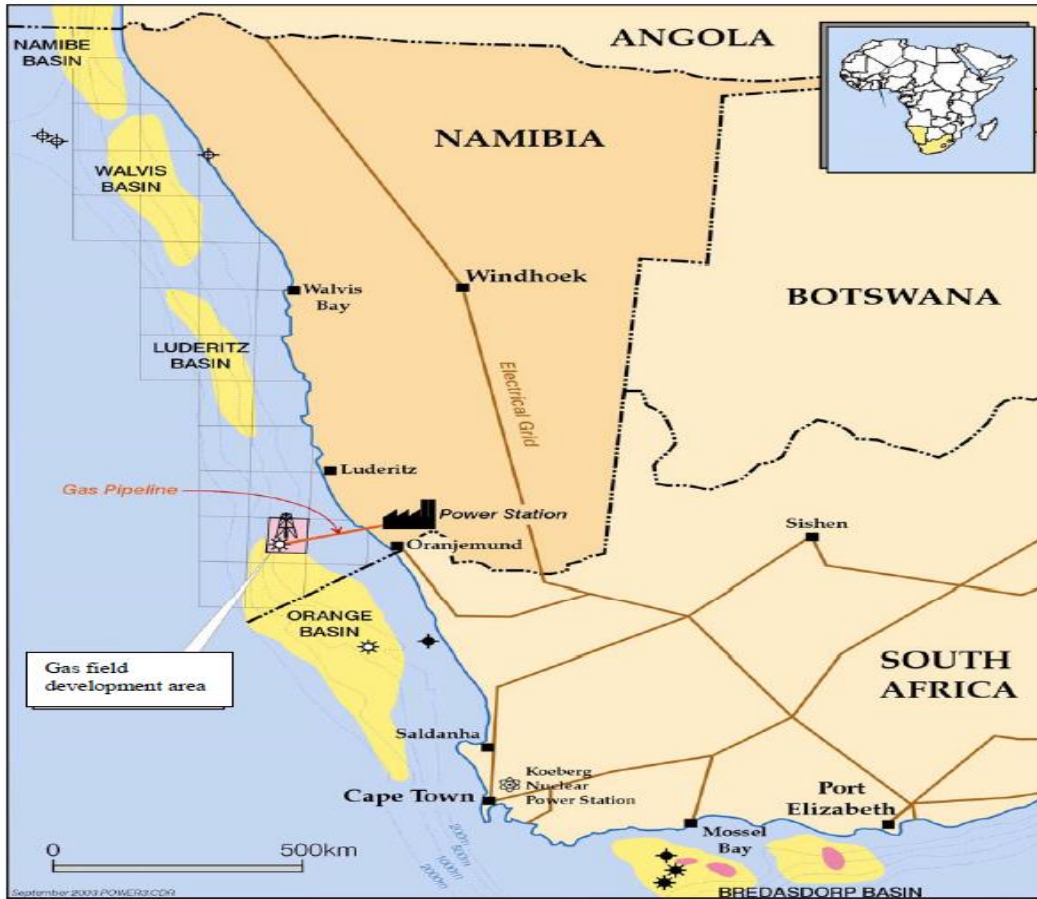


Figure 1: Kudu gas field development area Sourced from (Kudu Gas to Power Project: Integrated Impact and Mitigation Report 2006).

¹⁰ Ibid at page 30.

¹¹ The Kudu gas project, unpublished NAMCOR presentation dated 7 October 2018.

¹² “Namibia to pare back Kudu gas-to-power project” Creamer media Engineering news (30 April 2018). Available at: Engineeringnews.co.za/print-version/namibia-to-pare-back-kudu-gas-to-power-project-2018-04-30 (Accessed on 25 July 2018).

1.1 Aim and objective

1.1.1 Aim

Legal Risk is the risk of losses arising from an unintentional or negligent failure to meet a professional legal obligation.¹³ The aim of this thesis is to pursue the question of how legal risk affects the development of offshore gas operations, the author aims to do this with a particular focus on the Kudu gas field.

1.1.2 Objective

To encourage the development of the petroleum industry, the regulatory framework for petroleum must also be attractive to investors.¹⁴ In light of this, the main objectives of this thesis are to identify what the legal risks are pertaining to the development of offshore upstream gas operations. Additionally, this paper intends on identifying these risks in correlation with evaluating Namibia's legal framework that governs this risk and determining what the potential consequences of these risks are towards the development of the Kudu gas project. To conclude, the author will establish mitigating factors for the risk as well as recommendations.

1.2 The research questions

1.2.1 Primary question

How does legal risk affect the development of offshore gas operations?

1.2.2 Secondary questions

What are legal risks?

What is the legal framework governing these risks?

What are the consequences of these legal risks towards the development of offshore upstream gas operations for the kudu gas project?

What are the mitigating factors to the risks and recommendations?

¹³ http://www.openriskmanual.org/wiki/Legal_Risk (Assessed on 29 July 2018)

¹⁴ Van den Berg H.M. "Regulation of the upstream petroleum industry: A comparative analysis and evaluation of the regulatory frameworks of South Africa and Namibia" 2014

1.3 Methodology

Considering the above objectives and research questions this research primarily comprises of a desktop study for the research of upstream gas operations. The Kudu gas project will be used as the case study to analyze the legal risks of the development of upstream gas operations. This paper will therefore also make use of both published and unpublished material as well as internet sources. This research involves an analysis of the legal frameworks governing upstream gas operations in the Namibian context such as the following primary sources:

- i. Petroleum (Exploration and Production) Act, 1991 (Act 2 of 1991);
- ii. Petroleum Taxation Act, 1991 (Act 3 of 1991);
- iii. Petroleum Laws Amendment Act, 1998(Act 24 of 1998); and the
- iv. Model Petroleum Agreement (MPA), 2007.
- v. Environmental Management Act 7 of 2007

There are several other Acts that have a direct or indirect impact on the upstream gas sector in Namibia, such as those pertaining to health and safety, land use laws, water laws and labor laws. Unfortunately, discussing these laws would be going beyond the scope of this study. The focus therefore will be primarily on the above pieces of legislation that regulate the development of upstream gas operations.

1.4 Limitations

The petroleum industry in Namibia is still at an infant stage and consequently there is currently not much literature on upstream gas operations and even less literature on the kudu gas project. Therefore, for most parts of this paper reliance will be placed on institutional project update presentations, website publications, newspaper articles and reports. This study could have ideally been more enriched with interviews from project managers from the both the Kudu upstream partners as well as the downstream partners more especially, concerning the Petroleum Agreement, the Gas Supply Agreement and Offtake Agreements. However, due to the controversial sensitive nature of this project, confidentiality constraints placed limitations that did not allow for the sharing of these agreements and this affected the quality of the work done in chapter 4 on the contractual risk analysis.

1.5 Relevance of this research

Gas and hydro-power resources in Namibia are abundant and capable of supplying ten or more times the present demand of electricity.¹⁵ For Namibia, the development of operations of the Kudu gas field would be imperative for the energy supply targets of the country as one of the main targets of the Namibia white paper on energy is reducing electricity imports and achieving security of electricity supply in Namibia.¹⁶ Namibia's current local electricity peak demand stands at 656MW, exceeding local generation capacity at 484MW at peak, this means the sector relies on energy imports from neighboring power corporations.¹⁷ Total peak demand is expected to reach 755MW by 2022.¹⁸ The Kudu gas power plant is envisaged to produce 475MW once operations commences. The generation of this capacity of electricity may possibly remain for up to 25 years which could foster economic growth and eliminate the reliance of imports of electricity from other countries. The development of the Kudu gas field is therefore a key economic advantage for Namibia.

For oil and gas operations, the most critical and highly risky operation is usually centered at the upstream activities.¹⁹ Upstream activities are activities that happen before processing and refining of hydrocarbon and those activities are exploration, conceptual development and production.²⁰ Currently despite the large gas potential in the kudu gas field, gas production has not commenced. Over the years, there have been concerns of how legal and regulatory requirements may pose as risks towards the development of upstream gas operations. It is therefore of utmost relevance to determine what these legal risks are and how they affect the development of offshore gas operations, with a particular focus on the Kudu gas field.

1.6 Overview of chapters

This thesis comprises of five chapters. Chapter 1 is entitled "*Introduction*" and it traces the historical background of the Kudu gas field. It further sets out the research aims and objectives of this paper, the research question, the research methods and limitations thereof as well as the relevance of the study. It concludes with an overview of all five chapters of the study.

¹⁵ The White Paper on Energy Policy of 1998 at page 20. Available at: 'Energy Policy' <<http://www.mme.gov.na/energy/index.html>> (Accessed 22 July 2018).

¹⁶ *Ibid.*

¹⁷ Namibia's 5th National Development Plan (NDP5) 2017/18-2021/22.

¹⁸ *Ibid* at page 8.

¹⁹ Suda K.A., et al. "A Review on Risks and Project Risks Management: Oil and Gas Industry" 6:8 International Journal of Scientific & Engineering Research (2015): 938.

²⁰ *Ibid.*

Chapter 2 is entitled *“Identifying the legal risks”* this chapter is divided into two parts; the first part provides a detailed overview of what natural gas is and the processes leading to the development of upstream gas operations. The second part discusses various risks pertaining to the oil and gas industry and zooms into the different categories of legal risk and concludes with the identification of which legal risk categories are applicable to upstream gas operations.

Chapter 3 is entitled *“Namibia upstream gas legal framework”* this chapter outlines the legal, constitutional and regulatory framework that regulates the upstream gas operations in Namibia by introducing existing law and institutions governing upstream gas operations. This outline was done to establish the legal framework governing the legal risks of upstream gas operations.

Chapter 4 is entitled *“The consequences of the legal risks towards the development of offshore upstream gas operations for the kudu gas project”* this chapter provides the current progress update on the Kudu gas project and conducts a legal risk analysis establishing the crux of how legal risks can affect upstream gas operations. This chapter also briefly outlines other interesting observations linked to the Kudu gas project that albeit not related to legal risks are worth noting.

Chapter 5 is entitled *“Conclusions and recommendations”* and herein the concluding remarks are made based on the findings of the analysis made throughout the paper. This chapter also sets out recommendations and mitigating factors.

CHAPTER 2: IDENTIFYING THE LEGAL RISKS

2.0 Introduction

To enhance the objectives of this study and to adequately identify what the legal risks are that affect the development of upstream gas operations it is important to commence this chapter by defining natural gas, understanding how it is formed and the process and procedures leading to the development of upstream natural gas operations. This chapter will therefore first provide a detailed overview of the natural gas and in considering that the oil and gas industry is divided into three parts, namely upstream, midstream and downstream, it is important to note that this paper only focuses on the upstream gas operations, this chapter will also discuss what upstream operations entail and the different processes leading to the production of gas. The last part of this chapter will focus on defining risk and outlining the various risks that occur in oil and gas operations before narrowing it down to what legal risk entails in order to establish and identify the potential legal risks that can arise during the development of upstream gas operations.

2.1 An overview of the development of upstream gas operations

2.1.1 What is natural gas?

Natural gas occurs deep beneath the earth's surface and consists mainly of methane, a compound with a molecular structure consisting of one carbon atom and four hydrogen atoms within its molecular structure.²¹ Natural gas also contains small amounts of hydrocarbon gas liquids and nonhydrocarbon gases.²² Natural gas is mainly found in gas fields. Petroleum is defined as:

"...any liquid or solid hydrocarbon or combustible gas existing in a natural condition in the earth's crust and includes any such liquid or solid hydro-carbon or combustible gas which has in any manner been returned to such natural condition, but shall not include coal, bituminous shales or other stratified deposits from which oil can be obtained by destructive distillation, or gas arising from marsh or other surface deposits."²³

²¹ Natural gas explained, U.S Energy Information Administration, October 2017. Available at: https://www.eia.gov/energyexplained/index.php?page=natural_gas_home (Accessed on 12 September 2018).

²² *Ibid.*

²³ Definitions section in the Petroleum (Exploration and Production) Act 2 of 1991.

and a petroleum field is defined as:

“...a block or blocks in respect of which a declaration under section 42 is in force.”²⁴

Petroleum is therefore the umbrella term used to refer to oil and gas and on this basis this paper will use these terms interchangeably.

2.1.2 Geological elements of natural gas leading to upstream gas operations

Millions of years ago, the remains of plants and animals (diatoms) decayed and built up in thick layers, sometimes mixed with sand and silt, becoming organic material.²⁵ Over the years, pressure and heat changed some of this organic material into coal, some into oil (petroleum), and some into natural gas.²⁶

Below is an illustration of how natural gas is formed:

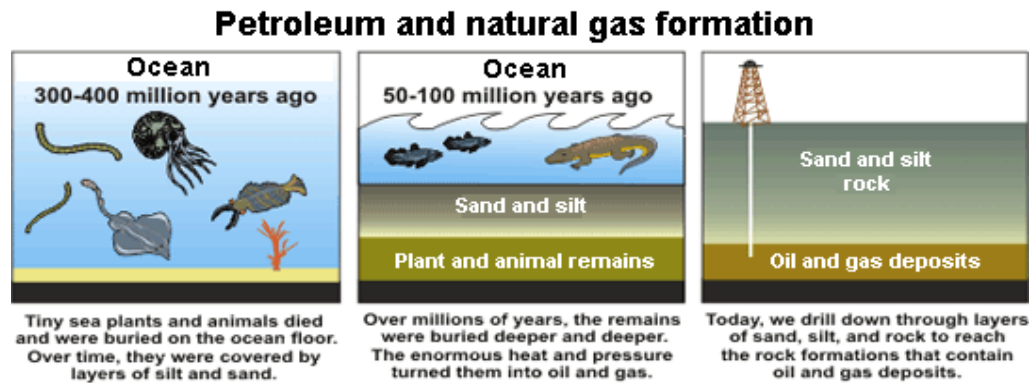


Figure 2: Petroleum and natural gas formation. Source: U.S. Energy Information Administration website.

For a deposit to occur natural gas is than trapped in underground rocks much like how a sponge traps water within pockets.²⁷ It is further noted that natural gas can be hard to find since it is often trapped in porous rocks deep underground onshore or offshore.²⁸ Geologist therefore use various methods to find

²⁴ *Ibid.* The declaration referred to in this definition as per Section 42 of the Act is declared when a “discovery is of a commercial interest and the Minister upon an application made to the Minister by the holder of the license concerned, within a period of 90 days as from the date of such application declare by notice in the Gazette the discovery block and not more than eight other blocks specified in the application to be a petroleum field.

²⁵ Natural gas explained, U.S Energy Information Administration, October 2017. Available at: https://www.eia.gov/energyexplained/index.php?page=natural_gas_home (Accessed on 12 September 2018).

²⁶ *Ibid.*

²⁷ “Natural gas” Secondary Energy info book at page 1. Available at: <http://www.need.org/files/curriculum/infobook/NGasI.pdf>). (Accessed on 16 September 2018)

²⁸ *Ibid* at page 2.

natural gas deposits such as setting off small explosions or drop heavy weights on the surface to record the sound waves as they bounce back from the rock layers' underground.²⁹ This is called exploration and it is the stage when upstream activities commence.

Upstream is commonly known as the exploration and production part of the oil and gas industry.³⁰ It covers all activities related to searching for gas, recovering gas, and producing crude oil and/or natural gas from underground or underwater fields.³¹ This additionally covers drilling of exploratory wells, and subsequent drilling and operating the wells that recover and bring the crude oil or raw gas to the surface and the gas withdrawn from a well is called wet natural gas because it usually contains liquid hydrocarbons and nonhydrocarbon gases.³² Methane and other useful gases are separated from the wet natural gas near the site of the well or at a natural gas processing plant, the processed natural gas is called dry or consumer-grade natural gas. This natural gas is sent through pipelines to underground storage fields or to distribution companies and then to consumers. There are five main phases in upstream gas operations, they are as follow:

i. Phase 1: Exploration

This exploration phase involves obtaining permission to drill from the owners of onshore or offshore acreage thought to contain oil or gas.³³ This phase aims to find potentially viable oil and gas sources.³⁴ If no potentially viable oil and gas sources are discovered then operations are terminated, however where potentially viable oil and gas sources are identified, further exploration will occur.³⁵

ii. Phase 2: Appraisal and drilling

²⁹ "Natural gas" *Secondary Energy info book at page 1*. Available at:

<http://www.need.org/files/curriculum/infobook/NGasl.pdf>). (Accessed on 16 September 2018).

³⁰ Rounds A.J. "Upstream, Midstream, and Downstream... What's the difference?" Lonetree USA (June 2015). Available at: <https://lonetreeusa.com/upstream-midstream-downstream-whats-difference>(Accessed on 16 September 2018).

³¹ *Ibid.*

³² Natural gas explained, U.S Energy Information Administration, October 2017. Available at: https://www.eia.gov/energyexplained/index.php?page=natural_gas_home (Accessed on 12 September 2018).

³³"What is Upstream Oil and Gas?" EKT Interactive (2018). Available at: <https://www.ektinteractive.com/what-is-upstream/>(Accessed on 15 September 2018).

³⁴ Darko E. "Short guide summarising the oil and gas industry lifecycle for a non-technical audience" October 2014(Accessed on 16 September 2018).

³⁵ *Ibid.*

There is always uncertainty in the geological and geophysical survey results and normally the only way to be sure that a prospect is favorable is to drill an exploratory well.³⁶ Drilling is physically creating the “borehole” in the ground that will eventually become an oil or gas well.³⁷ Infrastructure may be developed to access drilling sites and depending on the location of the sites, such exploration companies will engage with communities as their operations increasingly impact on the local environment and economy.³⁸ Additionally, investment will be made in the technical and commercial components of exploration and also in social and environment impact assessments.³⁹

iii. Phase 3: Development

At this phase, legal documents such as government contracts and permits may be revised or renewed and the site is prepared for production.⁴⁰ Limited infrastructure and site development will already be in place as part of the exploratory and initial drilling phase, but during the field development phase activity will dramatically increase and first oil/gas will be produced towards the end of this phase.⁴¹

iv. Phase 4: Production

The production phase of the upstream segment maximizes recovery of petroleum from subsurface reservoirs.⁴² Production activities includes efficiently recovering the oil and gas in a producing field using primary and secondary recovery methods, tertiary, or enhanced oil recovery (EOR), also referred to as improved oil recovery.⁴³ There is uncertainty in any field about the amount of oil/gas, so it can be difficult to predict the volume of production which will fluctuate across this phase, with the rate of extraction typically rising to a peak and tapering off towards the end of the field’s commercial lifetime.⁴⁴

³⁶ “What is Upstream Oil and Gas?” EKT Interactive (2018). Available at: <https://www.ektinteractive.com/what-is-upstream/>(Accessed on 15 September 2018).

³⁷ “What is Upstream Oil and Gas?” EKT Interactive (2018). Available at: <https://www.ektinteractive.com/what-is-upstream/>(Accessed on 15 September 2018).

³⁸ Darko E. “Short guide summarising the oil and gas industry lifecycle for a non-technical audience” October 2014(Accessed on 16 September 2018).

³⁹ *Ibid.*

⁴⁰ Darko E. “Short guide summarising the oil and gas industry lifecycle for a non-technical audience” October 2014(Accessed on 16 September 2018).

⁴¹ *Ibid.*

⁴² “What is Upstream Oil and Gas?” EKT Interactive (2018). Available at: <https://www.ektinteractive.com/what-is-upstream/>(Accessed on 19 September 2018).

⁴³ *Ibid.*

⁴⁴ Collier P. “Managing Ghana’s Oil Discovery” January, 2012, Centre for the Study of African Economies, Department of Economics Oxford University. (Accessed on 19 September 2018).

v. Phase 5: Close

Once it is no longer cost-effective to extract remaining reserves, the site is decommissioned and the operating companies are typically responsible for returning the site to as close to original state as possible.⁴⁵

2.1.3 Upstream gas in the Namibian context

In Namibia, there has been promising signs of potential offshore oil resources.⁴⁶ There has also been an indication of potential hydraulic fracturing in Namibia's future, although geologists hold the view that there is little shale gas potential in Namibia.⁴⁷ To date, 48 exploration licenses, one production license, and two coal bed methane licenses have been issued to Namibian and international oil and gas companies.⁴⁸ Overall, a total of 32 wells have been drilled offshore Namibia, these comprise 15 exploratory wells and seven appraisal wells (Kudu gas field/license area) and 10 ODP/DSPD wells drilled for scientific research.⁴⁹

The upstream gas industry is arguably the most complex of all in the oil and gas business sectors.⁵⁰ It an industry regarded to be highly capital-intensive, highly risky, and highly regulated.⁵¹ Consequently, various risks may arise from legislative, safety and environmental considerations⁵² and in this instance, risk identification during operations becomes essential. Risk identification is the process of finding, recognizing and describing risks in an organized way in order to assure that all of the important activities in the organization have been identified and categorized.⁵³

⁴⁵ Darko E. "Short guide summarising the oil and gas industry lifecycle for a non-technical audience" October 2014 (Accessed on 19 September 2018).

⁴⁶ Van den Berg H.M. "Regulation of the upstream petroleum industry: A comparative analysis and evaluation of the regulatory frameworks of South Africa and Namibia" 2014 (Accessed on 28 August 2018).

⁴⁷ *Ibid.*

⁴⁸ "Upstream activities" on the National Petroleum Corporation website. Available at: www.namcor.com.na/about/upstream-activities. (Accessed on 19 September 2018).

⁴⁹ *Ibid.*

⁵⁰ "What is Upstream Oil and Gas?" EKT Interactive (2018). Available at: <https://www.ektinteractive.com/what-is-upstream/> (Accessed on 15 September 2018).

⁵¹ *Ibid.*

⁵² Chapter three will provide a full illustration of the legal framework under which the Kudu gas project operates and conduct a risk assessment in accordance with this legislative framework and its contractual obligations.

⁵³ Kusyanti A.A. "Legal risk analysis" 2015. (Accessed on 19 September 2018).

2.2 What is risk?

Risk rests in between scientific perceptions of calculable probabilities and cautious perceptions of uncertainty and unpredictability, which are embedded within cultural, social and political environments, also including the normative valuations of the severity of the possible outcomes, against the possible benefits.⁵⁴ Risk is also defined as a problem that might cause losses or might threaten the success of a project leading to production.⁵⁵

The oil and gas industry is highly operated in a project based environment, whereby each tasks is highly structured in such a way a single operation might involve several small projects in order to ensure the running of the operation will be less risky and more efficient.⁵⁶ Efficiency of an oil and gas industry is therefore highly dependent on the success or the completion of several small projects.⁵⁷

In the development of oil and gas fields, the construction of facilities and the drilling of production or injection wells is capital intensive and require advanced technology.⁵⁸ Due to constantly changing market conditions and difficult environmental challenges, cost projections can be uncertain and in order for the upstream segment to continue to be profitable the production needs to be economically viable.⁵⁹ It is therefore important to constantly identify risks in order to be able to mitigate potential risks and ensure the successful development of gas fields.

2.2.1 Identifying risk in upstream gas operations

There are different types of risks in the upstream gas industry which are mainly impacted by the prevailing host country political environment and regulations, including:⁶⁰

⁵⁴ Paramonov S., *Managing HSE risks in the Barents Sea offshore projects: approaches of Norwegian regulators and Eni Norge in Goliat operations*, Unpublished Masters Dissertation (Nord Universitet, 2016). Available at: <http://hdl.handle.net/11250/2408838> (Accessed 19 Sept 2018).

⁵⁵ Suda K.A., et al. "A Review on Risks and Project Risks Management: Oil and Gas Industry" 6:8 *International Journal of Scientific & Engineering Research* (2015): 938.

⁵⁶ *Ibid.*

⁵⁷ *Ibid.*

⁵⁸ "Risks related to oil and gas exploration and production" in *TOTAL: Registration Document 2014*. Available at: http://publications.total.com/document-de-reference_2014_VA/risk-factors/other-risks/risks-related-to-oil-and-gas-exploration-and.html (Accessed 19 Sept 2018).

⁵⁹ *Ibid.*

⁶⁰ "What is Upstream Oil and Gas?" EKT Interactive (2018). Available at: <https://www.ektinteractive.com/what-is-upstream/> (Accessed on 19 September 2018).

2.2.1.1 Political Risk

Political risk is defined as the possibility that political decisions or events in a country will affect the business climate in such a way that investors will lose money or not make as much money as they expected when the investment was made.⁶¹ Political instability refers to unexpected or unforeseen changes in leadership succession, government policy, or in a government's implementation of power than political risk.⁶² Political risk can cause political instability by creating wars, civil unrest, or other international conflicts.⁶³ The ultimate political risk is the possibility of expropriation of assets, where the host government takes over the investment, with or without compensation.⁶⁴

2.2.1.2 Economic risk

Economic risk arises due to price controls and tax regimes.⁶⁵ Economic risk on international projects may also include, oil prices collapse, capital cost overruns, high operating costs, loss of demand from the facility.⁶⁶ Some economic risk overlap occurs with political risk in assessing the factors that also can affect the economics of a project such as the stability in the tax system (regime), ability to repatriate earnings and currency exchange rate stability.⁶⁷

2.2.1.3 Geological risk

With geological risk there is a very high degree of uncertainty in exploration and production of upstream gas due to the lack of true visibility on the oil or gas reservoir and this is why geological estimations made by maps and seismic data is actually of great importance to the success of the future project.⁶⁸ Today, with all the current seismic and evaluation technologies and very sophisticated computer modeling, the prospect could still contain poor source rock, no reservoir rock, no cap rock, faulted or poorly consolidated reservoir and tight sands.⁶⁹

⁶¹ Bischoff G.E. "Regional Political Risk Analysis: The conflict in the Niger Delta and its impact on the political risk of the Gulf of Guinea" 2010 (Accessed on 19 September 2018)

⁶² *Ibid.*

⁶³ Business Processes and Risk Management EKT Interactive (2018). Available at: <https://www.ektinteractive.com/business-processes-risk-management/>(Accessed on 19 September 2018)

⁶⁴ *Ibid.*

⁶⁵ *Ibid.*

⁶⁶ Business Processes and Risk Management EKT Interactive (2018). Available at: <https://www.ektinteractive.com/business-processes-risk-management/>(Accessed on 19 September 2018)

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

2.2.1.4 Legal risk

Legal risk is one of the most difficult kinds of risk to measure and manage.⁷⁰ Legal risk includes, but is not limited to, exposure to fines, penalties or punitive damages resulting from supervisory actions.⁷¹ Legal risk also arises from failure to enact appropriate policies, procedures, or controls to ensure it conforms to laws, regulations, contractual arrangements, and other legally binding agreements and requirements.⁷²

There are four broad categories of legal risk, or four areas of legal uncertainty: structural, regulatory, litigation, and contractual.⁷³

i. Litigation risk

There is a range of events that cause litigation risk as litigation is broad, these events include employee misconduct, accidents, product liability inter alia.⁷⁴ Prior to litigation, it is important to identify the areas of uncertainty that affect objective by building blocks to measure and manage legal risk from to avoid litigation.⁷⁵ This type of risk occurs only during the downstream gas operations phase.

ii. Contractual risk

The traditional approach to contract risk focuses on a breach of contract by one party and the extra-contractual liabilities that might arise, this approach treats each contract individually and in isolation.⁷⁶ It is therefore important to have a risk management strategy on drafting effective agreements. Quality contract drafting is necessary, but not sufficient to manage contract risk.⁷⁷ Companies that are actively

⁷⁰ Little M. *How to Measure and Manage Legal Risk*, Berkman solutions Risk Management (08 March 2018) Available at: <https://www.berkmansolutions.com/how-to-measure-and-manage-legal-risk>(Accessed on 19 September 2018).

⁷¹ Mohammed H. "A comparative study of risk management in private sector banks between Yemen and India 2005 2010" 2015(Accessed on 19 September 2018).

⁷² *Ibid.*

⁷³ Little M. *How to Measure and Manage Legal Risk*, Berkman solutions Berkman solutions [Risk Management](#) (08 March 2018)

Available at: <https://www.berkmansolutions.com/how-to-measure-and-manage-legal-risk> (Accessed on 22 September 2018)

⁷⁴ *Ibid.*

⁷⁵ *Ibid.*

⁷⁶ *Ibid.*

⁷⁷ Little M. *How to Measure and Manage Legal Risk*, Berkman solutions Berkman solutions [Risk Management](#) (08 March 2018)

Available at: <https://www.berkmansolutions.com/how-to-measure-and-manage-legal-risk> (Accessed on 22 September 2018).

dealing with a wide range of activities which engage volatile hydrocarbons are exposed to substantial risks and liabilities and in this regard, most of the petroleum contracts for upstream projects depart from the common law tradition of risk allocation by shifting the risk to another party; this is done to protect commercial interests.⁷⁸ To achieve this goal, contractual provisions are used in allocating the risks; especially those related to people, property and the environment.⁷⁹

The substantive, common and difficult to track risk is the uncertainty that arises from the contract portfolio in its entirety.⁸⁰ This risk is arises at the phase of upstream gas operations, therefore this paper will look at what the contractual risks are in terms of the gas sale agreements, off take agreements and the model petroleum agreement that have been entered into for the Kudu gas project.

iii. Regulatory/Legislative risk

Petroleum sector projects are complex, high-risk investments which require a carefully drafted regulatory framework that combines sustainable economic development for the host states as owners of the resource with guarantees and incentives to investors asked to risk their capital in these projects.⁸¹

A host state's petroleum law must therefore regulate key stakeholders' responsibilities and license terms in comprehensive detail and should be non-negotiable.⁸² Some host states are developing countries where petroleum legislation is very general or does not exist at all, and this gives the host states utmost flexibility in negotiations.⁸³ This type of legal uncertainty creates legislative risk that deters foreign investments. For the foreign investor, it is often preferable that the general framework for exploration and production is legislated under a generic petroleum law, so there is room for negotiations of the details under the contract.⁸⁴ Chapter three of this paper will make conduct analysis of the Namibian petroleum

⁷⁸ Zahari, Wan Zulhafiz, On the Contractual Risk Allocation in Oil and Gas Projects (October 13, 2017). *The Law Review (LR)*. pp. 168-193, 2017. Available at SSRN: <https://ssrn.com/abstract=3052064>(Accessed on 22 September 2018).

⁷⁹ *Ibid.*

⁸⁰ Little M. How to Measure and Manage Legal Risk, Berkman solutionsBerkmansolutions Risk Management (08 March 2018)

Available at: <https://www.berkmansolutions.com/how-to-measure-and-manage-legal-risk> (Accessed on 22 September 2018).

⁸¹“Petroleum Legislation and Regulations” Extractives Hub publications at page 1. Available at: <https://extractiveshub.org/servefile/getFile/id/4223>(Accessed on 22 September 2018)

⁸² *Ibid* at page 3.

⁸³ “Petroleum Legislation and Regulations” Extractives Hub publications at page 1. Available at: <https://extractiveshub.org/servefile/getFile/id/4223>(Accessed on 22 September 2018)

⁸⁴ *Ibid* at page 6.

legislation and identify the potential legal risk to the development of offshore upstream gas operations pertaining to the Kudu gas project.

iv. Structural risk

Structural legal risk is rare for most organizations.⁸⁵ Structural legal risks arise from uncertainty about the underpinnings of a particular industry, technology or method of doing business.⁸⁶ Structural legal risks can arise from sources other than legislation and the scope of a structural legal risk is broad and it usually alters the competitive landscape.⁸⁷

2.3 Conclusion

This chapter established a better understanding of the natural gas occurrences and the upstream activities that lead to gas production. This was an important establishment to make as it created a foundation that enabled the link to be drawn between the five categories of legal risks and identifying which are most applicable to upstream gas operations, this identification was that the legal risks to the development on upstream gas operations in terms of legislative risk and contractual risk.

⁸⁵ Little M. How to Measure and Manage Legal Risk, Berkman Solutions Risk Management (08 March 2018) Available at: <https://www.berkmansolutions.com/how-to-measure-and-manage-legal-risk> (Accessed on 22 September 2018).

⁸⁶ *Ibid.*

⁸⁷ *Ibid.*

Chapter 3 - Namibia upstream gas legal framework

3.0 Introduction

Namibia vests ownership of and control over all natural resources such as oil and gas in the state.⁸⁸ Ownership remains vested in the state unless natural resources are otherwise lawfully owned.⁸⁹ The High Court of Namibia however dismissed that the vesting clause in the constitution means that the state owns all natural resources.⁹⁰ It was ruled that natural resources are simply administered by the state on the behalf of the Namibian people.⁹¹ This means that the state administers the rights to natural resources and the state may grant private petroleum companies rights to search for and to extract petroleum.⁹² Such rights in Namibia can be owned by both locals and foreigners in line with the applicable laws.

Before foreign investors consider investing in a country's oil and gas sector, such an investor first seeks to establish a clear understanding of the general legal and fiscal legal framework governing petroleum resources in that country. It is therefore important for a country to have a legislative framework in place when it comes to oil and gas as it

*“...provides the basic context for and the rules governing petroleum operations in the host country; to regulate them, as they are carried out by both domestic, foreign and international enterprises; and to define the principal administrative, economic and fiscal guidelines for investment activity in the sector.”*⁹³

This chapter will therefore determine the legal framework that regulates access to oil and gas resources in Namibia in terms of licenses required, legal compliance in terms of reporting at the development stage of gas operations, what the environmental requirements are that need to be complied with, the fiscal legal framework as well as penalties for not complying with these legal obligations. In chapter two this paper identified two categories under the type of legal risks that arise during upstream gas operations namely; legislative/regulatory risks and contractual risk. So, in addition to outlining the general legal framework, this chapter aims to determine the exact laws that govern these two types of legal risks with

⁸⁸ Section 2 of the Petroleum (Exploration and Production) Act 2 of 1991.

⁸⁹ Article 100 of the Namibian constitution.

⁹⁰ *Rostock CC and Another v Van Biljon* 2011 (2) 751 (HC) at [8].

⁹¹ *Rostock* (note 24) at page 10.

⁹² Section 2 of the Petroleum (Exploration and Production) Act 2 of 1991.

⁹³ Onorato WT., *Legislative Frameworks Used to Foster Petroleum Development* (1995) Washington The World Bank at page 3. Available at:

<http://documents.worldbank.org/curated/en/761771468765623659/Legislative-frameworks-used-to-foster-petroleum-development> (Accessed on 12 October 2018).

the objective of further analyzing them against the current project status of the Kudu gas project in chapter four.

3.1 Legislative and constitutional framework

3.1.1 National White Paper on Energy policy

The Energy White Paper was adopted in 1998 as the national energy policy for the exploitation and development of the petroleum (oil and gas) resources of the Namibia.⁹⁴ The policy covers the exploitation of offshore petroleum resources and deals with energy demand (mainly household energy), supply (electricity, upstream oil and gas, downstream liquid fuels, downstream gas, and renewable energy) and a number of cross-cutting issues (economic empowerment, environment, energy efficiency and regional energy trade and co-operation).⁹⁵ It directs that the Namibian upstream policy should aim to attract adequate investment in exploration and production, especially in the light of the limited capacity of the local petroleum exploration and production sector.⁹⁶

3.1.2 The Petroleum (Exploration and Production) Act

The Petroleum Act is primarily based on the utilization of upstream petroleum resources and is the key legal instrument for the exploration and production of petroleum. The Act aims to provide for the reconnaissance, exploration, production and disposal of, and the exercise of control over, petroleum.⁹⁷ The Act prohibits the carrying out of any reconnaissance operations, exploration operations or production operations for petroleum in or upon (onshore and offshore) any land in Namibia, except under and in accordance with a license.⁹⁸ Once a license is obtained, a licensee is prohibited from transferring a license or grant, cede or assign any interest in a license to any other person, or be joined as a joint holder of a license otherwise than in writing and with the approval in writing of the Minister.⁹⁹

The Act has enforcement mechanisms in place for any person who contravenes or fails to comply with the provisions of Section 9 (1) or any term or condition of a license or approval, and note that such person

⁹⁴ The White Paper on Energy Policy of 1998. Available at: 'Energy Policy' <<http://www.mme.gov.na/energy/index.html>> (Accessed 02 October 2018).

⁹⁵ Moller, L., 2013. Evolution of the legal framework for oil and gas exploration and production in Namibia. Available at: <http://openair.rgu.ac.uk> (Accessed on 14 October 2018).

⁹⁶ Paragraph 3.2.1. of the National White Paper on Energy Policy.

⁹⁷ Preamble of the Petroleum (Exploration and Production) Act 2 of 1991.

⁹⁸ Section 9 (1) (a) of the Petroleum (Exploration and Production) Act 2 of 1991.

⁹⁹ Section 9 (1) (b) of the Petroleum (Exploration and Production) Act 2 of 1991.

shall be guilty of an offence and on conviction liable to a fine not exceeding R 100 000 or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment.¹⁰⁰ All holders of a license are required to keep a proper record of their operations.¹⁰¹ In terms of the Act, license holders are further required to twice a year submit a summary of geological and geophysical work carried out, and drilling activities performed, including the results of the analysis of any substances extracted from any well¹⁰² and a list of maps and geological and geophysical reports prepared by or on behalf of such holder in connection with operations carried out in terms of the license issued to such holder.¹⁰³ Within sixty days after the end of each year of the currency of the license, the holder must submit to the Commissioner a return in respect of the results of the operations carried out during the previous year and the estimates of petroleum recoverable in the area to which the license relates for the period ending on the last day of the succeeding year¹⁰⁴ and on each day on which drilling operations are carried out, the holder must¹⁰⁵ submit a report on such drilling operations carried out on the previous day.

Contravention of these reporting requirements or failure to comply is an offence and on conviction be liable to a fine not exceeding R 100 000 or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment.¹⁰⁶

Once exploration is done and a petroleum field has been declared, the holder of the exploration license issued may be, subject to the provisions of the Act relating to production licenses, apply within a period of two years as from the date on which the petroleum field has been so declared or such further period as the Minister may on good cause shown allow in writing during the currency of its license, for a production license in respect of such petroleum field.¹⁰⁷

3.1.3 The Namibian Constitution

As stated earlier in section 3.0, the ownership of and control over all natural resources in Namibia are vested in the state.¹⁰⁸ The Constitution also provides that the state must actively promote and maintain the welfare of the people by adopting, *inter alia*, policies aimed at the maintenance of ecosystems,

¹⁰⁰ Section 9 (2) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁰¹ Section 18 of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁰² Section 18 (1)(c)(i) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁰³ Section 18 (1)(c)(ii) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁰⁴ Section 18(1)(d) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁰⁵ Section 18(1)(e) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁰⁶ Section 18 (3) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁰⁷ Section 43(1) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁰⁸ Section 2 of the Petroleum (Exploration and Production) Act 2 of 1991.

essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians.¹⁰⁹ The Constitution further provides for the appointment of an Ombudsman, who is independent body with the duty to investigate complaints concerning the irrational exploitation of nonrenewable resources, the degradation and destruction of ecosystems.¹¹⁰

3.1.4 Petroleum Taxation Act

The way in which resources are taxed can have a powerful impact on the political and economic fate of resource-rich countries.¹¹¹ The legal framework embodying the fiscal regime applicable to petroleum companies will make a country more or less attractive for investment.¹¹² The Act aims to provide for the levying and collection off a petroleum income tax and an additional profits tax in respect of certain income received by or accrued to or in favor of persons in connection with exploration operations, development operations or production operations carried out in Namibia in relation to petroleum focused on the legal framework for petroleum resources, the discussion of petroleum royalty and taxation is limited to the legislative framework for petroleum royalty and taxation and not the economic or accounting aspects thereof.¹¹³

3.1.5 Environmental Management Act

This Act provides for the promotion of the sustainable management of the environment and the use of natural resources by establishing principles for decision making on matters affecting the environment; the appointment of the Environmental Commissioner and environmental officers; and to provide for a process of assessment and control of activities which may have significant effects on the environment.¹¹⁴ The Act also provides for the co-ordination and harmonization of environmental policies and plans of relevant ministries to minimize duplication and to ensure consistency.¹¹⁵ To ensure compliance with these

¹⁰⁹ Article 95(1)(l) of the Namibian Constitution.

¹¹⁰ Article 89 and 91 (c) of the Namibian Constitution.

¹¹¹ Daniel P., et al, "Introduction" in Daniel P, Keen M and McPherson C (eds) *The Taxation of Petroleum and Minerals: Principles, Problems and Practice* (2010) London Routledge at page 1.

¹¹² "The competitiveness of the regime is an essential determinant of the amount of upstream investment in exploration, discovery, and production by multinational oil companies." African Development Bank and the African Union *Oil and Gas in Africa* (2009) New York Oxford University Press Inc at page 80.

¹¹³ Preamble of Petroleum (Taxation) Act 3 of 1991.

¹¹⁴ The Environmental Management Act 7 of 2007.

¹¹⁵ Section 23 of the Environmental Management Act 7 of 2007.

provisions, the Petroleum Act empowers the Minister to require a petroleum license applicant to carry out environmental impact studies concerning their proposed upstream operations within their license area upon application.¹¹⁶

Provision is also made for the ‘Liability of holders of production licenses for pollution of environment other damages or losses caused’¹¹⁷ and anyone who causes damage to the environment must pay the costs associated with rehabilitation of damage to the environment and to human health caused by pollution, including costs for measures as are reasonably required to be implemented to prevent further environmental damage.¹¹⁸

3.2 The institutional framework that administers the oil and gas industry

3.2.1 The Ministry of Mines and Energy

The Petroleum Act vests all rights in relation to petroleum in the State, through the Ministry of Mines and Energy.¹¹⁹ The Ministry of Mines and Energy (MME) carries prime responsibility for regulating the Namibian extractive industry including the collection of royalties, and ensuring that safety; health and environmental standards are consistent with the relevant State and Commonwealth legislation, regulations and policies.¹²⁰ The Ministry is responsible for issuing, transferring, renewing and amending all licenses for the exploration and production of petroleum resources. The Minister, in granting a license, does so subject to conditions contained in the Model Petroleum Agreement and statutory conditions in the Petroleum Act.¹²¹

The Petroleum Act provides for three types of licenses;

- i. The reconnaissance license that involves the gathering of seismic data is valid for two years, and can be renewed twice for two years each time.¹²²

¹¹⁶ Section 12 Petroleum Exploration and Production Act 1991 (Act 2 of 1991)

¹¹⁷ Section 71 Petroleum Exploration and Production Act 1991 (Act 2 of 1991)

¹¹⁸ Section 3 (2)(J), Environmental Management Act, 2007

¹¹⁹ Section 2 of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

¹²⁰ www.mme.gov.na/about-us/

¹²¹ Section 14 of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

¹²² Section 23(1) of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

- ii. The exploration license allows for data gathering and the drilling of exploratory wells and includes (a) “geological, geophysical, geochemical, paleontological, aerial, magnetic, gravity or seismic surveys and the appraisal of such surveys and drilling for appraisal purposes”; and “the study of the feasibility of any production operations or development operations” to be carried out in the license area and of the environmental impact of such operations (Part VI). This license is valid for four years and it may be extended for a further two periods of two years each.¹²³ In addition, the Minister can extend the exploration period for a further two years if he or she deems it in the interest of the development of the petroleum resources of Namibia.¹²⁴ The 1998 Petroleum Laws Amendment Act provides for an extension of the initial period of the exploration license up to five years and a renewal period of up to three years.¹²⁵
- iii. A production license allows for the extraction of the petroleum resource and the duration of this license is for a period of not more than 25 years but it can be extended for a further period of 10 years.¹²⁶

3.2.2 *The National Petroleum Corporation (NAMCOR)*

The Petroleum Act sets out the functions of NAMCOR and the mandate to carry out reconnaissance, exploration and production operations either on its own or in partnership with other organizations in the industry.¹²⁷ It provides exploration and production services for onshore and offshore petroleum resources in Namibia.¹²⁸ The institutional role of NAMCOR is to actively promote the hydrocarbon potential of Namibia. In exercising this role the company is tasked with advising the Ministry of Mines and Energy on policy issues regarding the upstream petroleum industry and monitoring the petroleum activities of oil companies operating within Namibia.¹²⁹ The Minister may also require NAMCOR to carry out any process of refining, or disposing of, or dealing in, petroleum or any by-products of such petroleum, or to take part in any such process carried out by any other person.¹³⁰

¹²³ Section 30(1) of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

¹²⁴ Section 30(2)(b) of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

¹²⁵ section 1 of the section 1 Petroleum Laws Amendment Act 1998.

¹²⁶ section 45(1) of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

¹²⁷ Section 8 of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

¹²⁸ “Upstream activities” on the National Petroleum Corporation website. Available at: www.namcor.com.na/about/upstream-activities. (Accessed on 14 October 2018).

¹²⁹ *Ibid.*

¹³⁰ Section 8(1)(a)(ii) of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

3.3 The contractual framework for exploration of upstream gas

3.3.1 Petroleum agreement

Before a petroleum exploration license is issued in Namibia, the Minister must enter into a petroleum agreement with the persons concerned, this agreement may not be in conflict with the provisions of the Petroleum Act.¹³¹ The Petroleum Act provides for additional discretionary terms and conditions in respect of production operations which in some instances may not have been included when the agreement was negotiated and entered into in respect of the exploration license. To ensure that all conditions are included for the negotiations of the exploration license, the Ministry of Mines and Energy drafted a model petroleum agreement in 1998 and was updated in 2007. This agreement is applicable to both exploration and production operations.¹³²

A condition that really stands out in the agreement is the requirement of a petroleum license holder to comply with giving preference to Namibian citizens for employment who possess appropriate qualifications for the purpose of the operations to be carried out in terms of the license.¹³³ The license holder is also required to carry out training programs to encourage and promote the development of such citizen's person's employ.¹³⁴ A holder of a license must also, after due regard being had to the need to ensure technical and economic efficiency, make use of products, equipment and services which are available in Namibia.¹³⁵

3.4 Conclusions on what the framework is that governs legal risks

It is clear, however, that on the one hand although petroleum must be developed and exploited for the benefit of the Namibian people, on the other hand, investors must also be attracted and sufficiently protected.¹³⁶ From the outline provided above of the legal framework that governs legislative/regulatory risk and contractual risk of upstream gas operations, the Namibian petroleum framework appears attractive to investors as it does not have any unrealistic expectations in the various provisions under the

¹³¹ Section 13(1) and section 13(4) of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

¹³² Section 13 (2)(b) of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

¹³³ Clause 22.1 of the Model Petroleum Agreement, 2007

¹³⁴ Clause 22.3 (a) of the Model Petroleum Agreement, 2007

¹³⁵ Clause 23.1 of the Model Petroleum Agreement, 2007

¹³⁶ Van den Berg HM. "Regulation of the upstream petroleum industry: A comparative analysis and evaluation of the regulatory frameworks of South Africa and Namibia" 2014 (Accessed on 11 October 2018)

legal framework. It however dictates various conditions and requirements that need to be complied with by petroleum license holders, these requirements include obtaining various licenses before commencing exploration or production operations, reporting by written notice and record keeping standards during the upstream gas phase, environmental management requirements, conditions relating to the employment and training of Namibian citizens during the duration of a license, fiscal requirements relating to petroleum income tax to be paid as well as annual work plan and budget submissions during operations. These requirements become legal risks if they are not complied with and failure to comply could render contravention of the legislation regulating the ownership and access to petroleum resources resulting in a punishable criminal offence or result in a breach of contractual obligations.¹³⁷

¹³⁷ Chapter four will give a detailed overview of the Kudu gas project and its current status in terms of its development of upstream offshore gas operations and conduct a legal risk analysis against the legal framework outlined in this chapter.

CHAPTER 4 - THE CONSEQUENCES OF THE LEGAL RISKS TOWARDS THE DEVELOPMENT OF OFFSHORE UPSTREAM GAS OPERATIONS FOR THE KUDU GAS PROJECT.

4.0 Introduction

The oil and gas industry forms a vital and large part of any country's economy as it provides important support to transport, manufacturing and energy sectors and is a huge supplier of employment.¹³⁸ As such, risk exposures to this industry culminate in a risk exposure for the country as a whole and risks arising from this industry are a real threat to the industry and the country and require the close attention of government and partners.¹³⁹ In chapter two of this paper I outlined the various potential risks that could arise during the development of upstream offshore gas operations and specifically, narrowed down to the focus of the paper; legal risk. In chapter 3 an outline the legal framework that governs legal risk in upstream gas operations was provided.

It has become clearer that legal risks are the risks arising from violations of or non-conformance with laws, rules, regulations, prescribed policies or ethical standards and non-compliance exposes the organization to fines, financial penalties, payment of damages, and the voiding of contracts.¹⁴⁰ With the legal framework that governs the legal risks to the development of upstream offshore gas operations established this chapter will provide a detailed overview of the Kudu gas project and its current status in terms of its development of upstream offshore gas operations and conduct a legal risk analysis against the legal framework outlined in chapter 3.

¹³⁸ Young J. "Risk Management For A Typical Petroleum, Oil And Gas Company In South Africa" 6:4 Corporate Ownership & Control Journal (2009) at page 346.

¹³⁹ *Ibid.*

¹⁴⁰ *Ibid* at page 352.

a. The kudu gas project

4.1.1 The historical overview of the kudu gas field

Namibia does not offer easily exploitable fossil fuel reserves, apart from its natural gas resources at the Kudu gas field.¹⁴¹ The Kudu gas field lies off the southern coast of Namibia, 130 km due west of the Orange River mouth¹⁴² and was discovered in 1974 when a joint venture involving, Chevron, Regent and Soekor drilled the first well Kudu (9A-1) offshore Namibia.¹⁴³ During late 1993, a 1600 km 2-D survey and a 300 km² 3-D seismic survey were completed, followed by the second half of 1996 by the drilling of the Kudu-4 well, which confirmed that the Kudu gas discovery was commercially exploitable.¹⁴⁴ After years of exploration and tests Kudu appeared to be mostly a natural gas field with 1.38 trillion cubic feet (tcf) of proven reserves, 3.82 tcf of probable reserves and 9.98 tcf of possible reserves.¹⁴⁵

Shell Exploration and Production Namibia BV (SEPN) and Energy Africa Kudu Ltd (then Engen (Kudu) Ltd) were awarded the license for Area 2814A containing the Kudu gas discovery on 6 May 1993 with SEPN as the operator.¹⁴⁶ In 1996 Energy Africa divested two thirds of its holding to Texaco whereupon the equity share of the companies in the Kudu Joint Venture became SEPN 75%, Energy Africa 10% and Texaco 15%, subsequently Chevron took over Texaco and became an equity holder as ChevronTexaco.¹⁴⁷ Tullow Oil plc took up an operating interest in production license 001 over the Kudu gas field, offshore Namibia and in 2004 Tullow concluded a Joint Development Agreement for the development of the field as part of a gas-to-power project.¹⁴⁸ In April 2007, Tullow agreed to sell Itochu Corporation a 20% interest production license 001 and to earn the 20% interest, Itochu had to pay 40% of the cost of two appraisal wells to

¹⁴¹ Factsheet CCS in Namibia. Desert Research Foundation of Namibia, 2010 at page 1. Available at: www.ccs-africa.org/fileadmin/ccs-africa/user/CCS_Africa_2/Namibia_factsheet.pdf (Accessed on 17 October 2018).

¹⁴² Wickens H. D. V., McLachlan I.R., "The stratigraphy and sedimentology of the reservoir interval of the Kudu 9A-2 and 9A-3 boreholes" 6, *Memoirs of the Geological Survey of Namibia* (1990), at page 9.

¹⁴³ [http://envoi.co.uk/wp-content/uploads/2018/09/P252Serica\(Namibia\)Synopsis.pdf](http://envoi.co.uk/wp-content/uploads/2018/09/P252Serica(Namibia)Synopsis.pdf)

¹⁴⁴ Kudu Gas to Power Project: Integrated Impact and Mitigation Report, the Southern African Institute for Environmental Assessment May 2006. Available at: www.the-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf

¹⁴⁵ "One day – one project" *Tullow nears development decision on Namibia Kudu Gas-To-Power*, 2B1st Consulting website (April 2013). Available on: <https://www.2b1stconsulting.com/tullow-nears-development-decision-on-namibia-kudu-gas-to-power/>

¹⁴⁶ Kudu Gas to Power Project: Integrated Impact and Mitigation Report, The Southern African Institute for Environmental Assessment May 2006. Available at: www.the-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf

¹⁴⁷ *Ibid.*

¹⁴⁸ Oil and gas in Namibia, Spilpunt "Mineral commodities and Africa. Available at: spilpunt.blogspot.com/2007/12/oil-and-natural-gas-in-namibia.html

investigate the significant upside potential of the Kudu field and make further financial payments depending on the ultimate volume of reserves developed and will provide Tullow with beneficial development financing for the project.¹⁴⁹ In 2014, Tullow and Itochu withdrew from the project, citing that “Kudu is an excellent project for Namibia, and Tullow is committed to assisting the government in moving it forward to a Final Investment Decision, but the Group will not be investing capital in the development as other projects currently rank higher in the capital allocation process.”¹⁵⁰

BW Offshore concluded its holding into the Kudu field acreage in February 2017, taking a 56% stake, with the state hydrocarbon company, NAMCOR, holding a 44% stake in the upstream and midstream segments of the project and the state power utility Nampower, with its partners, will offtake the gas and convert it to electricity.¹⁵¹

4.1.2 Kudu gas to power

A 1993 joint report by the United Nations Development Programme and the World Bank on energy issues in Namibia already rated the potential of the Kudu gas field higher than that of Epupa, both economically and environmentally.¹⁵² Given the Kudu field, electric power obtained from gas-fired power stations becomes a distinct possibility.¹⁵³ This 1996 prediction materialized in 1997 when the Kudu gas project which was initiated and then subsequently established in 2005.¹⁵⁴ This is after utilities NamPower, Eskom and the Namibia Petroleum Corporation (Namcor), together with SA-based exploration company Energy Africa, signed a Joint Development Agreement (JDA) and Memorandum of Understanding (MOU)

¹⁴⁹ *Ibid.*

¹⁵⁰ “Operations update: South and East Africa” Tullow Interim Management Statement (November 2014) at page 2. 111 Available at: www.tulloil.com/Media/docs/default-source/3_investors/2014-november-tullow-interim-management-statement.pdf?sfvrsn=8.

¹⁵¹ Africa Oil + Gas Report, *Don't Rule Out FID For Kudu Gas To Power in 2017* (November 2017). Available at: africaoilgasreport.com/2017/11/gas-monetization/dont-rule-out-fid-for-kudu-gas-to-power-in-2017/ (Accessed on 20 October 2018)).

¹⁵² “Electric Power from Kudu Gas: An Alternative to Epupa”, Urgewald, Sassenberg and Earthlife Africa- Namibia Branch (May 1996) at page 5. Available at: http://www.the1-eis.com/data/literature/Electric_Power_from_Kudu_Gas_An_Alternative_to_Epupa_March_1996.pdf

¹⁵³ *Ibid.*

¹⁵⁴ Timo Shihepo “Nam dilly-dallies on Kudu Gas Project” Southern Times (27 April 2018). Available on: <https://southerntimesafrica.com/site/news/nam-dilly-dallies-on-kudu-gas-project>

embracing a renewed commitment to the Kudu gas project.¹⁵⁵ The project has, however, been delayed by the upstream side of the project.¹⁵⁶

The overall need for the Kudu Gas Project is for Namibia to meet its projected electricity demand and to export excess power to neighboring countries.¹⁵⁷ Namibia's demand for electricity is growing as the Namibian economy develops and this increasing demand for electricity is significantly more than Namibia's current generation capacity, leading to the requirement to import approximately over 50% of its electricity demands from other utilities in the region, primarily Eskom of South Africa.¹⁵⁸ The development of operations of the Kudu gas field would therefore be imperative for the energy supply targets of the country as one the main targets of the Namibia white paper on energy is reducing electricity imports and achieving security of electricity supply in Namibia.¹⁵⁹

A decision was taken in April this year that Namibia will reduce the size of the planned Kudu Power Station after off-take agreements with South Africa's Eskom and Zambia's Copper belt Energy Corporation failed to materialize.¹⁶⁰ The NamPower chief executive officer conveyed that the decision to resize the power plant from 850 MW to 442,5 MW was made considering the power demand load forecast for Namibia adding that "The decision was also made to address the need for the project's reliance on export agreements to reach financial close, the export agreements were one of the issues that delayed the project."¹⁶¹ The power plant is now expected to cost an estimated N\$9,4 billion (US\$760 million), down from the previous estimate of N\$15,6 billion.¹⁶²

¹⁵⁵ Christof Maletsky, "Kudu project gets new life" *The Namibian* (07 June 2004). Available at:

<https://www.namibian.com.na/index.php?id=5532&page=archive-read>

¹⁵⁶ Timo Shihepo "Nam dilly-dallies on Kudu Gas Project" *Southern Times* (27 April 2018). Available on:

<https://southerntimesafrica.com/site/news/nam-dilly-dallies-on-kudu-gas-project>

¹⁵⁷ Kudu Gas to Power Project: Integrated Impact and Mitigation Report, The Southern African Institute for Environmental Assessment May 2006. Available at: [www.the-](http://www.the-eis.com)

[eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf](http://www.the-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf)

¹⁵⁸ Kudu gas project overview, 23 January 2017 at page 3

¹⁵⁹ Kudu Gas to Power Project: Integrated Impact and Mitigation Report, The Southern African Institute for Environmental Assessment May 2006. Available at: [www.the-](http://www.the-eis.com)

[eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf](http://www.the-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf)

¹⁶⁰ Nampa-Reuters "Namibia to scale down Kudu gas-to-power project" *The Namibian* 02 May 2014. Page 17

¹⁶¹ *Ibid.*

¹⁶² *Ibid.*

4.1.3 Gas field development of the Kudu gas project.

The gas field falls within quadrant 2814 on the continental shelf of Namibia, which falls within Namibia's Exclusive Economic Zone (EEZ). The gas in the Kudu gas field is located some 4.5 km underground in a complex network of porous rocks and the gas can only be accessed through a number of boreholes which are joined to a sub-sea manifold by sub-sea pipelines.¹⁶³ The Kudu project upstream developments encompass the gas field development and the construction of a pipeline to the power plant and gas conditioning plant adjacent to the power plant (referred to as the upstream component).¹⁶⁴

The development of the Kudu gas project will include three to four subsea wells tied back to a floating production system, with gas piped to shore via a 170 km pipeline to the on-shore Kudu power station.¹⁶⁵ Highly sophisticated valves and pressure control mechanisms will be installed to enable engineers to monitor the flow of gas and to shut the flow down if there is a problem and from the manifold at a central point in the gas field, the gas will enter a single pipeline which will run for some 170 km until it reaches the coast near Uubvlei, some 25 km north of Oranjemund.¹⁶⁶ The Kudu gas field development is located on the Atlantic 1 Diamond Mining License Area which lies in the path of the most economical pipeline route from the Kudu gas field to Oranjemund. The Atlantic 1 License area is held by NAMDEB and is being mined under a contract by De Beers Marine Namibia (Pty) Ltd (DBMN).¹⁶⁷ The site therefor forms part of a "restricted area", as defined in the Namibian Diamonds Act 13 of 1999 and to mitigate this, a Project Cooperation Agreement with NAMDEB was signed and the area for the power station site is to be excised from the mining license and leased by Kudu from the State.¹⁶⁸ It is anticipated that, if additional gas reserves are proven after 2-3 years of gas production, and the demand for electricity warrants it, the second phase of the project, an additional nominal 800 MW CCGT power plant, will be commissioned.¹⁶⁹ The upstream developers, NAMCOR and BW Kudu have entered into a Joint Operating Agreement to

¹⁶³ Kudu Gas to Power Project: Integrated Impact and Mitigation Report, The Southern African Institute for Environmental Assessment May 2006 at page 11. Available at: www.the-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf

¹⁶⁴ Environmental Impact Assessment Report of The Power Lines from The Kudu Gas Power Station (Uubvlei Site) To Oranjemond And Obib Respectively, Enviro Dynamics (June 2005) at page 10.

¹⁶⁵ Kudu gas project overview, 23 January 2017 at page 2

¹⁶⁶ *Ibid* at page 12.

¹⁶⁷ Kudu Gas to Power Project: Integrated Impact and Mitigation Report, The Southern African Institute for Environmental Assessment May 2006 at page 11. Available at: www.the-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf

¹⁶⁸ Kudu gas project overview, 23 January 2017 at page 2.

¹⁶⁹ Environmental Impact Assessment Report of The Power Lines from The Kudu Gas Power Station (Uubvlei Site) To Oranjemund and Oranjemond And Obib Respectively, Enviro Dynamics (June 2005) at page 10.

develop and exploit the Kudu gas field.¹⁷⁰ Additionally, for the upstream operations, the EPC agreement has been negotiated with Saipem S.A, selected following a rigorous competitive tender.¹⁷¹ The first gas is set to be produced on the 31st January 2020 as per below figure.

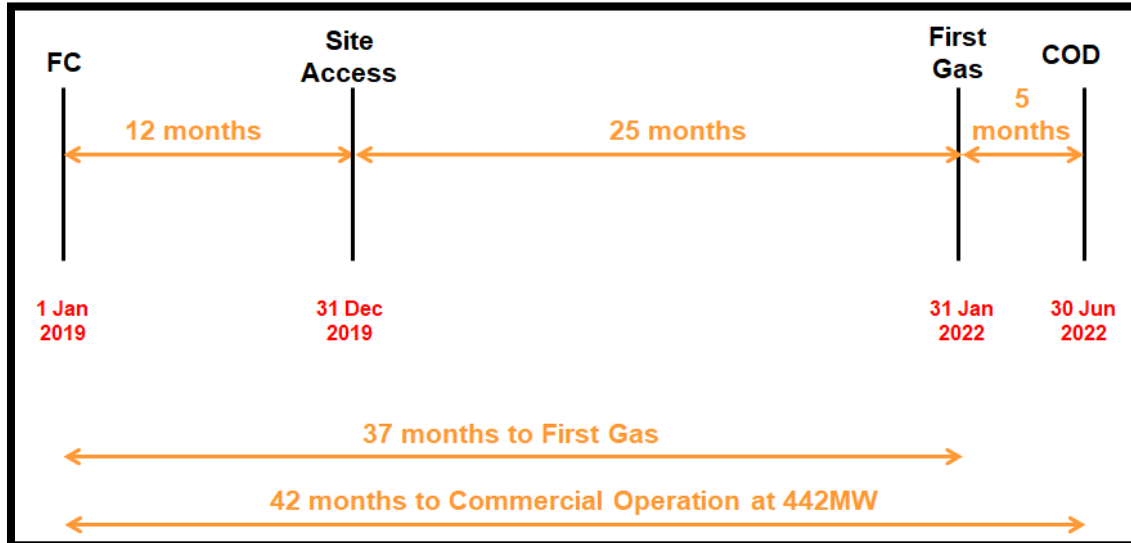


Figure 3: Kudu project time line sourced from (The Kudu gas project, unpublished NAMCOR presentation dated 7 October 2018).

¹⁷⁰ Kudu gas project overview, 23 January 2017 at page 1.

¹⁷¹ *Ibid* at page 2.

4.2 A legal risk assessment of the upstream gas offshore gas operations of the Kudu gas project.

4.2.1 Legislative and regulatory risk analysis

ACT/POLICY	KEY LEGAL RISKS IDENTIFIED	RISK IMPACT ON UPSTREAM GAS OPERATIONS	CONSEQUENCES OF RISK	KUDU COMPLIANCE
The Petroleum (Exploration and Production) Act and the Petroleum Laws Amendment Act, 1998	<ol style="list-style-type: none"> 1. The Act prohibits the carrying out of any reconnaissance operations, exploration operations or production operations for petroleum except under and in accordance with a license. 2. All holders of a license are required to keep a proper record of their operations. 3. license holders are further required to twice a year submit a summary of geological and geophysical work carried out, and drilling activities performed, including the results of the analysis of any substances extracted 	<ol style="list-style-type: none"> 1. HIGH 2. MEDIUM 3. HIGH 	<ol style="list-style-type: none"> 1. Person shall be guilty of an offence and on conviction liable to a fine not exceeding R 100 000 or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment. 2. Contravention of these reporting requirements or failure to comply is an offence and on conviction be liable to a fine not exceeding R 100 000 or to imprisonment for a period not exceeding five years or to 	<ol style="list-style-type: none"> 1. The upstream partners hold an exploration license issued in accordance with the Petroleum.

	<p>from any well¹⁷² Submit a list of maps and geological and geophysical reports carried out in terms of the license issued to such holder.¹⁷³</p> <p>4. Within sixty days after the end of each year of the currency of the license, the holder must submit to the Commissioner a return in respect of the results of the operations carried out during the previous year and the estimates of petroleum recoverable in the area to which the license relates for the period ending on the last day of the succeeding year ¹⁷⁴ and on each day on which drilling operations are carried out, the holder must submit a report on such drilling operations carried out on the previous day.¹⁷⁵</p>	<p>4. MEDIUM</p> <p>5. MEDIUM</p> <p>6. HIGH</p> <p>7. MEDIUM</p>	<p>both such fine and such imprisonment.¹⁷⁷</p>	<p>(Exploration and Production) Act (1991).¹⁷⁸</p> <p>A production license for the Kudu Production area, which includes part of the original area 2814A but extends slightly further west and south, was granted on 31 August 2005.¹⁷⁹</p> <p>Reporting compliance undetermined.¹⁸⁰</p> <p>The project has an environmental management plan in place to control and reduce environmental damage during operations.¹⁸¹</p>
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¹⁷² Section 18 (1)(c)(i) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁷³ Section 18 (1) (c)(ii) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁷⁴ Section 18(1)(d) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁷⁵ Section 18(1)(e) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁷⁷ Section 18 (3) of the Petroleum (Exploration and Production) Act 2 of 1991.

¹⁷⁸ Kudu gas project overview, 23 January 2017 at page 7

¹⁷⁹ Kudu Gas to Power Project: Integrated Impact and Mitigation Report, The Southern African Institute for Environmental Assessment May 2006 at page 11. Available at: www.the-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf

¹⁸⁰ Information on the reporting compliance was not available due to confidentiality.

¹⁸¹ The Kudu gas project, unpublished NAMCOR presentation dated 7 October 2018.

	<p>5. A petroleum license applicant must carry out environmental impact studies concerning their proposed upstream operations within their license area upon application.¹⁷⁶</p> <p>6. Mitigation measures for environmental control must be developed. Spillage of water, drilling fluids or effluents in the license area is prohibited except with a written exemption</p>			The upstream partners have conducted necessary EIA for the Kudu Gas Field development. ¹⁸²
Petroleum Taxation Act	1. There shall be paid annually for the benefit of the State Revenue Fund a petroleum income tax in respect of taxable income received by or accrued to or in favour of any person from a license area in connection	1. HIGH	2. Failure to pay an amount on or before the date determined by or under the Act or the terms and conditions of a license, an additional amount, calculated at the rate of	1. Fully complied with. ¹⁸⁵

¹⁷⁶ Section 12 of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991)

¹⁸² Kudu gas project overview, 23 January 2017 at page 7

¹⁸⁵ The Kudu gas project, unpublished NAMCOR presentation dated 7 October 2018.

	with exploration operations, development operations or production operations carried out in any tax year in such license area. ¹⁸³		one-third of one per cent per day, shall be payable on such amount or any part thereof as from the date on which such amount was payable until such time as such amount is paid. ¹⁸⁴	
Environmental Management Act	1. Resource extraction activities may not be undertaken without an environmental clearance certificate. ¹⁸⁶	1. HIGH	<p>1. In the event of non-compliance, an environmental officer may issue a compliance order to a person whom the environmental officer has reason to believe has contravened the Act or has contravened a condition of an environmental clearance certificate.¹⁸⁷</p> <p>2. Any person who, without good reason, fails or refuses to comply with a compliance order commits an offence and is liable on conviction to a fine not exceeding</p>	1. The upstream partners hold an Environmental Clearance Certificate for the Kudu Gas Field development in accordance with the Environmental Management Act (2007). ¹⁸⁹

¹⁸³ Section 5(1) of the Petroleum Income Tax Act.

¹⁸⁴ Section 98 of the Petroleum Exploration and Production Act 1991 (Act 2 of 1991).

¹⁸⁶ Section 27 (1) and Section 27 (2) (c) of the Environmental Management Act of 2007.

¹⁸⁷ Section 20 (2)(a)(b) of the Environmental Management Act of 2007

¹⁸⁹ Kudu gas project overview, 23 January 2017 at page 7

			<p>N\$500 000 or to imprisonment for a period not exceeding 25 years or to both such fine and such imprisonment.¹⁸⁸</p> <p>Any person who commits an offence and is on conviction liable to a fine not exceeding N\$500 000 or to imprisonment for a period not exceeding 25 years or to both such fine and such imprisonment.</p>	
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¹⁸⁸ Section 20 (8) of the Environmental Management Act of 2007

4.2.2 Contractual risk analysis

4.2.2.1 Petroleum Agreement

The Petroleum Agreement was signed in May 1993 after the exploration license was granted.¹⁹⁰

4.2.2.2 Gas supply Agreement

The key commercial tie between the Kudu Upstream and Downstream projects is through the Gas Supply Agreement (GSA) between the upstream joint venture partners and KuduPower.¹⁹¹ This agreement is in a final draft form and as it is still being negotiated.

4.2.2.3 Offtake agreements

As mentioned at the beginning of this chapter, the gas extracted from the Kudu gas field will be sold to Nampower to generate electricity. So far, Kudu gas downstream partner Nampower is the only party that upstream kudu has entered into for a gas supply agreement. The power purchase agreement (PPA) between KuduPower and NamPower is in a final draft form, subject to input from project lenders.¹⁹²

The above agreements are all still in draft form and are therefore regarded as confidential, therefore a risk analysis cannot be made. However, the Kudu update report notes that the agreements have been negotiated and drafted by international legal counsels with wide experience in similar projects. Contractual risks have been thoroughly tested through commercial and financial modelling.¹⁹³

4.3 Other risk observations

4.3.1 Financial risks

The project is critically dependent upon payment for power under the PPA by NamPower. NamPower has a B+ credit (Fitch) rating, and its PPA obligations will be backed by a guarantee from the Namibian Government.¹⁹⁴ In March 2015 the Namibian government provided support to the Kudu gas Project and it was reported in the national budget statement that N\$4.93 billion will be allocated to support

¹⁹⁰ Kudu Gas to Power Project: Integrated Impact and Mitigation Report, The Southern African Institute for Environmental Assessment May 2006 at page 11. Available at: www.the-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf

¹⁹¹ Kudu gas project overview, 23 January 2017 at page 5.

¹⁹² *Ibid* at page 5.

¹⁹³ *Ibid* at page 8.

¹⁹⁴ *Ibid*.

the balance sheets of NamPower and NamCor for the Kudu Gas Power Project and that the State will provide a guarantee for the financing that will be sourced outside the budget.¹⁹⁵ However, towards the end of the same year, this support was withdrawn primarily because the amount for the government guarantees was estimated at N\$32 billion which is far above the threshold of 10% of Namibia's total GDP and for that reason the ministry was not keen to offer the guarantee because it was considered too risky.¹⁹⁶

4.3.2 Market risks.

As the Kudu gas field will not be supplying to an international market, the gas price has been established with no linkage to commodity oil and gas prices, escalating only in response to inflationary movements. The key market risks to the project are thus in the power market, reflecting a deterioration in either the demand for power or the regional prices for power.¹⁹⁷

4.4 Understanding the consequences of legal risks to the development of offshore upstream gas operations of the Kudu gas project

4.3.1 How does legal risk affect the development of offshore gas operations?

Legal risks can hamper the development of offshore upstream operations if legal compliance to the regulatory requirements is not adhered to. This can lead to penalties being imposed on the project company or a possible jail term by company directors which ruins reputational risk which in turn affects investor perception of the project and ultimately leads to delays in the development of the project. It is therefore imperative to have a good understanding of what legal risks are that hamper upstream operations. As illustrated in the legal risk assessment conducted above, the key legal risk for the Kudu gas project can briefly be outlined as:

- i. Licensing requirements
- ii. Reporting requirements
- iii. Record keeping requirements
- iv. Environmental compliance
- v. Income Tax payments

¹⁹⁵Budget statement 2015/2016 financial year presented by Hon. Calle Schlettwein at page 17. Available at: http://www.mof.gov.na/documents/27827/109194/Budget+statement_FINAL.pdf/3eb82a05-b8f5-4daa-a941-dc93c888f414

¹⁹⁶ "Why finance is against Kudu" The Namibian 21 September 2015. Available at: <https://www.namibian.com.na/index.php?id=142101&page=archive-read>

¹⁹⁷ Ibid at page 9.

vi. Contractual obligations

The above legal risks are governed by the legal framework set out in chapter 3 and of which framework was further applied to the current status of the Kudu gas project. The analysis shows that despite the number of risks applicable, with the information available it appears the Kudu gas project is in compliance with the regulatory requirements set out in the various pieces of legislation. This is a good step in the right direction as it affects the development of the gas field positively.

CHAPTER 5 – RECOMMENDATIONS AND CONCLUSION

5.1 Conclusions

With the increasing regulatory pressure, oil and gas companies cannot afford the risk of being non-compliant with regulatory requirements. Oil and gas projects need to ensure that vital documents, including approvals for drilling, building, and maintaining wells, are available throughout the enterprise and across enterprise boundaries to minimize risk and ensure regulatory compliance.¹⁹⁸

The aim of this thesis was to pursue the question of how legal risk affects the development of offshore gas operations, with a focus on the Kudu gas field.

In pursuance of this question, the paper commenced discussions by creating a firm foundation of an improved understanding of the technical elements to the paper, which included the natural gas occurrences and the upstream activities that lead to gas production. A distinction between upstream, midstream and downstream gas was also established. Once this foundation was laid, the flow of the discussions enhanced the ability to associate the relevant categories of legal risks applicable to the upstream gas operations. Based on this, the legal risk categories applicable to the upstream gas were identified as the legislative risk and contractual risk. The paper then delved into establishing the legal and regulatory framework that governs the legal risks identified in chapter 2. An outline was provided of the legal framework that governs the upstream gas operations. The requirements laid out in the framework were noted as reasonable and investor friendly as no unrealistic expectations were formed from the legal framework. The paper views this to mean that the legal framework for the upstream gas operations in Namibia is clear and predictable.

It was established that although the legal framework was clear and predictable, the various conditions and requirements that have to be complied with by petroleum license holders, came with a duty to, inter alia obtain various licenses before commencing exploration or production operations, reporting by written notice and record keeping standards during the upstream gas phase, environmental management requirements, conditions relating to the employment and training of Namibian citizens during the duration of a license, fiscal requirements relating to petroleum income tax to be paid as well as annual work plan and budget submissions during operations. It was established that these requirements become a legal risk if they are not complied with and failure to comply could render

¹⁹⁸ Bigliani R. "Reducing Risk in Oil and Gas Operations" White paper Sponsored by: EMC Roberta Bigliani White paper, May 2013. Available at: <https://documentum.opentext.com/wp-content/uploads/2017/06/minimizing-operational-risk-in-oil-gas-industry.pdf>

contravention of the legislation regulating the ownership and access to petroleum resources resulting in a punishable criminal offence or result in a breach of contractual obligations.

Upon conducting a legal risk assessment based on the legal framework governing the legislative/regulatory and contractual risks, it was established that legal risk can hamper the development of offshore upstream operations quite negatively if legal compliance to the regulatory requirements are not adhered to. The consequences of non-compliance may include penalties being imposed on the project company or a possible jail term by company directors which ruins reputational risk which in turn effects investor perception of the project and which as mentioned in this paper finding in chapter 4, ultimately leads to delays in the development of the project. This thesis established that policy uncertainty deters investor interest in a country and that to encourage the development of the petroleum industry, the regulatory framework for petroleum must also be attractive to investors and made the recommendations below.

5.2 Mitigating factors and recommendations

It has been established by this paper that legal risks if not identified and complied with may hamper upstream gas operations. The paper also established that the Kudu gas project has been compliant with the regulatory requirements set out by the Namibian legal framework governing upstream gas operations. Legal risk was measured against the risk impact and the consequences of such impacts if it does, this denotes that managing risk is an integral part of good management, and fundamental to achieving successful project outcomes. Based on the findings in chapter 4, the following recommendations are made to mitigate legal risks:

5.2.1 Kudu gas project

- i. Develop a risk management process that is aimed at identifying and monitoring legal risk likely to affect the project continuously.
- ii. Develop and implement risk response measures that may act as a tool box in the event a legal risk problem arises, this is also referred to as a contingency plan.
- iii. Develop risk control measures linked to the risk response in ii above.

Risk management is becoming an important management discipline for most organizations including petroleum, oil and gas companies.¹⁹⁹ As project risk management is being pursued by many industries

¹⁹⁹ Young J. "Risk Management For A Typical Petroleum, Oil And Gas Company In South Africa" 6:4 Corporate Ownership & Control Journal (2009) at page 346.

and organizations, it proves that it has now become imperative to do this by means of a structured approach to ensure that the best risk management practices are implemented according to the needs of the project.²⁰⁰ Project Risk Management is composed of systematic processes by which Risk may be identified, evaluated and avoided, and mitigated or eliminated, in order to preserve the achievement of project's goals.²⁰¹ By implementing a risk management process, a project can have a higher likelihood of success as regulatory noncompliance which can lead to penalties being imposed and or, criminal sanctions being imposed which can negatively affect investor perception and cause the project financial loss or an unwarranted delays to the project progression.

It is submitted that the implementation of these recommendations will make the process of tracking legal risk compliance better as it has been identified that most legal risks are ongoing and require renewals, annual reporting inter alia. It is therefore made clear to ensure project compliance with regulatory requirements, a project risk manager should be appointed and tasked with the role of monitoring potential risk and putting into place controls to ensure compliance.

5.2.2 The Government of the republic of Namibia

Upon reviewing the legal framework that governs the upstream gas sector of Namibia and doing an analysis of the consequences of noncompliance of these legal instruments, it was established that the enforcement mechanisms are inadequate. The amounts payable for penalties serve as a slap on the wrist compared to how much revenue oil and gas companies make. It is therefore recommended that more stern enforcement mechanism is introduced in our petroleum and related legislation. This will deter oil and gas companies from not being compliant with our laws. The current enforcement mechanism, current enforcement is too lenient as it is possible that some instances, the cost of complying with our laws is more than our penalties, therefore more money must be charged for non-compliance and stricter jail terms. Additionally, the Petroleum directorate of the Ministry of Mines and Energy need to have a better record keeping system, to allow a proper track record to be done in terms of compliance of the petroleum exploration and production licenses.

²⁰⁰ *Ibid.*

²⁰¹Nielsen K.R. "Current Risk Management Issues in the Oil & Gas Industry" Deutsche Bank Oil & Gas Conference
" London, UK – (27 September 2007.).

Bibliography

Cases, Legislation and policies

Model Petroleum Agreement, 2007.

Namibia's 5th National Development Plan (NDP5) 2017/18-2021/22.

Namibian Diamonds Act 13 of 1999.

Petroleum (Exploration and Production) Act 2 of 1991.

Petroleum Laws Amendment 24 Act of 1998.

The Environmental Management Act 7 of 2007.

The Namibian constitution.

The Petroleum (Taxation) Act 3 of 1991.

The White Paper on Energy Policy of 1998.

Rostock CC and Another v Van Biljon 2011 (2) 751 (HC) at [8].

Academic papers, Dissertations and Thesis's

Bischoff G.E. "Regional Political Risk Analysis: The conflict in the Niger Delta and its impact on the political risk of the Gulf of Guinea" 2010 (Accessed on 19 September 2018)2016). Available at: <http://hdl.handle.net/11250/2408838> (Accessed 19 Sept 2018).

Collier P. "Managing Ghana's Oil Discovery" January, 2012, Centre for the Study of African Economies, Department of Economics Oxford University. (Accessed on 19 September 2018).

Daniel P., et al, "Introduction" in Daniel P, Keen M and McPherson C (eds)

Kusyanti A.A. "Legal risk analysis" 2015. (Accessed on 19 September 2018).

Mailula D.T. "Protection of petroleum resources in Africa: a comparative analysis of oil and gas laws of selected African states." 2013 LLD thesis, University of South Africa (Accessed on 11 September 2018).

Mohammed H. "A comparative study of risk management in private sector banks between Yemen and India 2005 2010" 2015(Accessed on 19 September 2018).

Moller, L., Evolution of the legal framework for oil and gas exploration and production in Namibia. 2013. Available at: <http://openair.rgu.ac.uk> (Accessed on 14 October 2018).

Paramonov S., Managing HSE risks in the Barents Sea offshore projects: approaches of Norwegian regulators and Eni Norge in Goliat operations, Unpublished Masters Dissertation (Nord Universitet, Routledge).

The Taxation of Petroleum and Minerals: Principles, Problems and Practice (2010) London

Van den Berg H.M. "Regulation of the upstream petroleum industry: A comparative analysis and evaluation of the regulatory frameworks of South Africa and Namibia" 2014 LLD thesis, University of Cape town.

Articles, presentations and Reports

Allocation in Oil and Gas Projects (October 13, 2017). The Law Review (LR). pp. 168-193, 2017. Available at SSRN: <https://ssrn.com/abstract=3052064>(Accessed on 22 September 2018).

Budget statement 2015/2016 financial year presented by Hon. Calle Schlettwein at page 17. Available at: http://www.mof.gov.na/documents/27827/109194/Budget+statement_FINAL.pdf/3eb82a05-b8f5-4daa-a941-dc93c888f414

Darko E. "Short guide summarising the oil and gas industry lifecycle for a non-technical audience" October 2014(Accessed on 16 September 2018).

Electric Power from Kudu Gas: An Alternative to Epupa, Urgewald, Sassenberg and Earthlife Africa-Namibia Branch (May 1996) at page 5. Available at: http://www.the1-eis.com/data/literature/Electric_Power_from_Kudu_Gas_An_Alternative_to_Epupa_March_1996.pdf

Kudu Gas to Power Project: Integrated Impact and Mitigation Report, The Southern African Institute for Environmental Assessment May 2006. Available at: www.the1-eis.com/data/literature/Kudu_SAIEA%20Integrated%20ImpactMitigation%20Report_May%202006.pdf

Suda K.A., et al. "A Review on Risks and Project Risks Management: Oil and Gas Industry" 6:8 International Journal of Scientific & Engineering Research (2015): 938.

The Kudu gas project overview, 23 January 2017 at page 3

The Kudu gas project, unpublished NAMCOR presentation dated 7 October 2018.

Wickens H. D. V., McLachlan I.R., "The stratigraphy and sedimentology of the reservoir interval of the Kudu

Young J. "Risk Management For A Typical Petroleum, Oil And Gas Company In South Africa" 6:4 Corporate Ownership & Control Journal (2009) .

Internet sources

"Natural gas" Secondary Energy info book at page 1. Available at: <http://www.need.org/files/curriculum/infobook/NGasl.pdf> . (Accessed on 16 September 2018)

"One day – one project" Tullow nears development decision on Namibia Kudu Gas-To-Power, 2B1st Consulting website (April 2013). Available on: <https://www.2b1stconsulting.com/tullow-nears-development-decision-on-namibia-kudu-gas-to-power/>

"Operations update: South and East Africa" Tullow Interim Management Statement (November 2014) at page 2. Available at: www.tulloil.com/Media/docs/default-source/3_investors/2014-november-tullow-interim-management-statement.pdf?sfvrsn=8.

"Petroleum Legislation and Regulations" Extractives Hub publications at page 1. Available at: <https://extractiveshub.org/servefile/getFile/id/4223>(Accessed on 22 September 2018)

"Risks related to oil and gas exploration and production" in TOTAL: Registration Document 2014. Available at: http://publications.total.com/document-de-reference_2014_VA/risk-factors/other-risks/risks-related-to-oil-and-gas-exploration-and.html (Accessed 19 Sept 2018).

"The competitiveness of the regime is an essential determinant of the amount of upstream investment in exploration, discovery, and production by multinational oil companies." African Development Bank and the African Union Oil and Gas in Africa (2009) New York Oxford University Press Inc at page 80.

"What is Upstream Oil and Gas?" EKT Interactive (2018). Available at:

"Why finance is against Kudu" The Namibian 21 September 2015. Available at: <https://www.namibian.com.na/index.php?id=142101&page=archive-read>

Africa Oil + Gas Report, Don't Rule Out FID For Kudu Gas To Power in 2017 (November 2017). Available at: africaoilgasreport.com/2017/11/gas-monetization/dont-rule-out-fid-for-kudu-gas-to-power-in-2017/ (Accessed on 20 October 2018).

Bigliani R. "Reducing Risk in Oil and Gas Operations, White paper, May 2013. Available at: <https://documentum.opentext.com/wp-content/uploads/2017/06/minimizing-operational-risk-in-oil-gas-industry.pdf>.

Business Processes and Risk Management EKT Interactive (2018). Available at: <https://www.ektinteractive.com/business-processes-risk-management/> (Accessed on 19 September 2018).

Christof Maletsky, "Kudu project gets new life" The Namibian (07 June 2004). Available at: <https://www.namibian.com.na/index.php?id=5532&page=archive-read>

Factsheet CCS in Namibia. Desert Research Foundation of Namibia, 2010 at page 1. Available at: www.ccs-africa.org/fileadmin/ccs-africa/user/CCS_Africa_2/Namibia_factsheet.pdf (Accessed on 17 October 2018).

Little M. How to Measure and Manage Legal Risk, Berkman solutionsBerkmansolutions Risk Management (08 March 2018) Available at: <https://www.berkmansolutions.com/how-to-measure-and-manage-legal-risk> (Accessed on 22 September 2018).

Memoirs of the Geological Survey of Namibia (1990), at page 9.

Ministry of Mines and Energy website. Available at: <http://www.mme.gov.na/petroleum/kudugas/> (Accessed on 25 July 2018).

Namibia to pare back Kudu gas-to-power project, Creamer media Engineering news (30 April 2018). Available at: Engineeringnews.co.za/print-version/namibia-to-pare-back-kudu-gas-to-power-project-2018-04-30 (Accessed on 25 July 2018).

Nampa-Reuters "Namibia to scale down Kudu gas-to-power project" The Namibian 02 May 2014. Page

National Petroleum Corporation website. Available at: www.namcor.com.na/about/upstream-activities. (Accessed on 19 September 2018).

Natural gas explained, U.S Energy Information Administration, October 2017. Available at: https://www.eia.gov/energyexplained/index.php?page=natural_gas_home (Accessed on 12 September 2018).

Nielsen K.R. "Current Risk Management Issues in the Oil & Gas Industry" Deutsche Bank Oil & Gas Conference" London, UK – (27 September 2007.).

Offshore Namibia -Lüderitz basin, SericaEnergy Project Introduction Synopsis (September 2018) at page3. Available at: [http://envoi.co.uk/wp-content/uploads/2018/09/P252Serica\(Namibia\)Synopsis.pdf](http://envoi.co.uk/wp-content/uploads/2018/09/P252Serica(Namibia)Synopsis.pdf). (Accessed on 13 July 2018). The full history of the kudu license holders

Oil and gas in Namibia,"Mineral commodities and Africa." Available at: spilpunt.blogspot.com/2007/12/oil-and-natural-gas-in-namibia.html

Onorato WT, Legislative Frameworks Used to Foster Petroleum Development (1995) Washington the World Bank at page 3. Available at: <http://documents.worldbank.org/curated/en/761771468765623659/Legislative-frameworks-used-to-foster-petroleum-development> (Accessed on 12 October 2018).

Rounds A.J. "Upstream, Midstream, and Downstream... What's the difference?" Lonetree USA (June 2015). Available at: <https://lonetreeusa.com/upstream-midstream-downstream-whats-difference>(Accessed on 16 September 2018).

Timo Shihepo "Nam dilly-dallies on Kudu Gas Project" Southern Times (27 April 2018). Available on: <https://southerntimesafrica.com/site/news/nam-dilly-dallies-on-kudu-gas-project>.

Timo Shihepo "Nam dilly-dallies on Kudu Gas Project" Southern Times (27 April 2018). Available on: <https://southerntimesafrica.com/site/news/nam-dilly-dallies-on-kudu-gas-project>.